MC0344

Capital Investment Manual

Management of Construction Projects

NHS Estates
An Executive Agency of the Department of Health

NHS
Executive

This booklet is part of the *Capital Investment Manual*, and contains guidance specific to construction schemes. It takes the planning process on from approval of the Outline Business Case through to the completion of construction. It must be read in conjunction with the *Business Case Guide*.

The *Capital Investment Manual* comprises the following booklets:

Overview

Project Organisation

Private Finance Guide

Business Case Guide

Management of Construction Projects

Commissioning a Health Care Facility

IM&T Guidance

Post-project Evaluation

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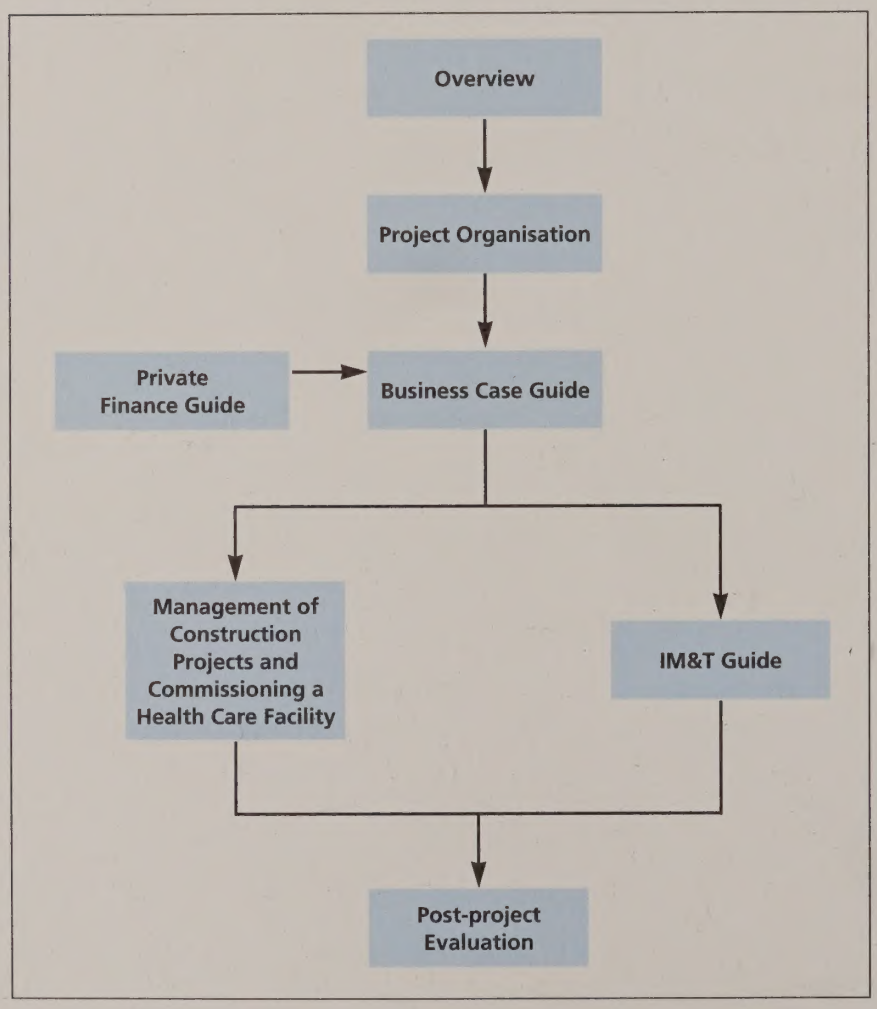

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Introductory

Foreword

The NHS capital building programme is one of the largest of its kind in the world. The National Health Service and Community Care Act 1990 led to the devolution of responsibility from the centre and regions to the local level NHS Trusts. This devolution applies to the management of major capital building projects.

Senior Trust managers should be aware of the procedures set out in this document and make every effort to ensure that they are followed. They will be accountable for the performance of staff and external personnel employed in implementing construction projects.

The delivery of a major health care facility can be complex, time-consuming and very costly. If the advice in this document is followed, it could be straightforward, efficiently executed and successfully completed. The advice and procedures in this document are aimed specifically at the needs of NHS Trusts in discharging their responsibilities for managing health care building projects.

The principles underlying the procedures in this manual are:

- Chief executives should be accountable and responsible for their capital projects with the minimum of rigid and mandatory procedures compatible with public accountability, compliance with government policies, and the consequent need for monitoring by the National Health Service Executive.

- Trusts' ownership responsibilities should be exercised through an organisational structure which places personal responsibility on individuals. The CEO should normally fulfil the role of project owner and a suitably senior trust employee should be appointed as project director. Responsibilities are described in the project organisation booklet.

- The objectives of project development are to provide health care facilities specified in the Full Business Case, obtain best value for money, and maintain probity.

Trusts should bear in mind that managing a construction project is like managing a separate and specialised business, but one which has defined start and completion dates. The annual rate of spending on a major project may be measured in millions of pounds, and justifies the same attention as a business with the same turnover. The most important tasks for a Trust are to:

- set up an appropriate organisation adequately staffed by competent and committed people, to train them, and to give them the authority to take decisions;
- prepare a brief containing all the requirements of the end users of the project, to have it agreed and signed off by them, and to avoid changing it thereafter;
- establish procedures to manage the complex issues involved in a construction project, particularly those affecting cost and progress;
- monitor performance so that the project director is fully informed and able to take prompt action if it should become necessary; and
- identify appropriate contractual arrangements in order to establish responsibility of consultants and contractors.

The principles set out in this document apply to all construction projects and trusts are commended to follow them as much as possible. But their mandatory application is confined to those which exceed a threshold to be notified to Trusts from time to time by the NHS Executive. For small, simple capital building projects it may not be sensible or cost effective to apply the procedures in full. Trusts should, however, follow the principles of good management and propriety for such projects, but may simplify the procedures for economy and to ease the administrative burden. Trusts remain accountable for their smaller value projects and will be expected to complete them on time, within budget, and to quality standards.

Trust Boards are accountable for a Trust's capital projects while the Secretary of State is ultimately reponsible for NHS activity. Trusts should therefore review the progress of projects as a regular item at Board Meetings. See *Project Organisation* booklet for the role of investment decision maker, which is usually undertaken by the Trust board.

In view of problems involving significant time and cost overruns on major building schemes, the NHS Executive wishes to have mechanisms in place that will act as an early warning device when major problems arise and provide assurances on scheme management. The NHS Executive therefore requires Trusts to provide regular information on the progress of schemes. Agreed capital project audits will be applied randomly to a proportion of schemes and specifically to schemes that indicate major problems. The monitoring and capital project audit procedures will be undertaken by NHS Estates.

Major capital projects attract a great deal of public attention and Parliamentary scrutiny. Project directors must be aware of this throughout.

Introduction

This part of the *Capital Investment Manual* (*CIM*) covers activities from Outline Business Case approval through to the completion of construction.

The procedures are shown in six stages.

- Stage 1: Full Business Case Leading to Approval
- Stage 2: Design
- Stage 3: Tender and Contract
- Stage 4: Supply and Construction
- Stage 5: Technical Commissioning and Handover
- Stage 6: Post Completion

Each stage follows on from the preceding one, with some possible overlap.

Contained within each stage is a description of the procedures as well as guidance on their application and on good practice. The main tasks are identified with an indication of who should perform them and whether they are mandatory.

Trusts should make use of the other guidance documents which are referred to, including *CONCODE* (see page 7), and should take advice from professional advisers and consultants. Before undertaking any of the procedures described in this document, Trusts should first put in place an appropriate organisational structure (see *Project Organisation*).

The procedures start with the development of the Full Business Case. The extent of the work required for the production of the Full Business Case may vary from project to project, and some activities described in this document may have been undertaken already to support the Outline Business Case. This applies particularly to the development of the brief and the extent of design. Notwithstanding this, the procedures should be carried out as shown, although the work involved in doing so may be reduced.

In a traditional contract procurement strategy, each stage is completed before the following stage is started. But for fast-track contract procurement strategies – e.g. Design and Build, Management Contracts – there is an overlap between the stages. Where this applies, the stage procedures have been divided into parts to indicate the differences between the contract strategies. The overlap cannot be defined with precision for every circumstance; in such cases project directors, on the advice of their project managers, should comply with the mandatory procedures but adapt the timing to suit the circumstances of their projects.

How to Use the Procedures

Tasks should generally follow the stages set out in this document in sequential order. There is scope for flexibility when carrying out preliminary or full design work. For example, some forms of procurement, such as Design and Build, entail the bulk of design work being carried out from the Contract stage – i.e., the design is part of the construction contract.

Finally, if in doubt, or when serious problems are encountered, refer to your NHS Executive contacts for advice.

MANDATORY PROCEDURES

Trusts and other provider units should carry out certain procedures which apply to the various stages in a capital scheme from inception to evaluation after completion. These procedures occur throughout the CIM and are:

- the establishment of an appropriate project organisation (see *Project Organisation*);
- the approval and re-approval requirements for funding following submission of business cases (see below and *Business Case Guide*);
- complying with required tendering and contract procedures (see below and *CONCODE*);
- complying with such other procedures where specified in this document;
- establishing project control procedures; and
- carrying out post-project evaluation (see *Post-project Evaluation*).

KEY DOCUMENT RECORD

The process should be documented in a way that will allow auditors to examine the project. Project Directors should ensure that a key document file is maintained, which will assist a project audit as well as being a useful tool in the management of the scheme.

RESUBMISSION OF SCHEME TO NHS EXECUTIVE

Schemes which are above the Treasury's delegated limit for approval will be required to follow at least one re-approval from the Treasury. For traditional procurement methods the Treasury re-approval will be applied for at the end of the Design Stage, just before the issue of the Certificate of Readiness to Proceed to Tender. For schemes using non-traditional procurement methods individual judgments will be made by the NHS Executive on the precise point at which the re-approval to the Treasury will be made. The procedure for submitting a scheme to the Treasury for re-approval will be managed by the NHS Executive in consultation with the Trust or unit seeking the approval.

All schemes requiring NHS Executive approval must be re-submitted for consideration at any point during the lifetime of the project if one of the following conditions apply:

- The cost of client changes exceeds 5 per cent of the approved sum, or
- The contingency allowance is spent at a rate disproportionate to the stage a project has reached (unless this was planned), or
- A significant new risk is identified which was not included in the risk assessment on which the last approval was based.

OTHER GUIDANCE DOCUMENTS

It is important to read this document in conjunction with the other documents in the *CIM*. Particular attention should be paid to the following:

Project Organisation
Business Case Guide
Private Finance Guide
Commissioning a Health Care Facility
Post-Project Evaluation

Another important document to use is *CONCODE*; this provides guidance on the contracting aspects of health building projects, including the implementation of policy and EC directives. *CONCODE* can help Trusts in the appointment of works contractors and consultants and the use of various forms of contract.

Further background material can be obtained from *Guidance Notes* produced by the Treasury Central Unit on Procurement (CUP), which are referred to in this document. They can be obtained free of charge by contacting:

HM Treasury
Central Unit on Procurement
Allington Towers
19 Allington Street
London SW1E 5EB

Tel: 071-270 1631
Fax: 071-270 1639

NB: The CUP documents use the term 'Project Sponsor' to describe the role defined as 'Project Director' in *CIM* documents.

A bibliography is provided in Appendix 11.

Synopsis of Process for Managing Construction Projects

The project director takes full responsibility for all the main activities listed below. These activities will often be carried out by others under the supervision of the project director. All these actions are mandatory for schemes that require approval by the NHS Executive, the Treasury or ministers. They are essential for most other schemes and where indicated should be followed in all cases.

STAGE 1: FULL BUSINESS CASE LEADING TO APPROVAL

Stage	Main Activities/Information	Paragraph Number
Review Outline Business Case	Start work on Full Business Case after reviewing approval for outline business case.	1.1.1, 1.1.2, 1.1.4 and 1.1.5
Internal project control	Develop proposals to ensure that effective control procedures will be in place throughout the project (see *Project Organisation*)	1.2.1
Employment of consultants	Project Directors to consult *CONCODE* for advice on the appointment of consultants.	1.4.1
Due consideration of private sector involvement	Consider use of private finance.	1.5.1
Initial brief	Preparation of policies and accommodation schedules. See Appendix 4 and NHS Estates Health Building Note 2.	1.6.1
Site investigation	Determine physical conditions on existing site.	1.7.1–1.7.2
Outline design	Development of outline design to satisfaction of user panel.	1.8.1
Contract procurement strategy	Develop preliminary contract strategy. Reference to *CONCODE* and CUP Guidance Note 36 should be made.	1.9.1
Planning permission	Apply for outline planning consent.	1.10.1–1.10.3
Development control plan	A development control plan should be developed or existing one reviewed.	1.11.1
Equipment strategy	Prepare a strategy for procurement of equipment.	1.12.1–1.12.3
Risk assessment and contingency allowance	Carry out a rigorous risk assessment and determine a suitable contingency allowance. See Appendices 2 and 3.	1.13.1
Budget costs	Refine costings of preferred option. Cost Forms OB1 and OB2 *Business Case Guide* (*BCG*) will assist completion of Forms FB1–FB4.	1.14.1–1.14.5
Running costs	Work up annual running costs.	1.15.1–1.15.2
Planning for post-project evaluation	Initial evaluation activity. See *Post-project Evaluation*.	1.16.1
Obtaining NHSE and Treasury approval if required	The project director should be aware of cost thresholds applicable to projects.	1.17.1–1.17.3
Stage completion	Completion of readiness to proceed to design certificate.	1.18.1

STAGE 2: DESIGN

Stage	Main Activities/Information	Paragraph Number
Quality standards	Ensure design team are aware of and take account of standards.	2.1.1–2.1.4
Brief development	Brief should be completed and frozen. Complete Certificate of Brief Acceptance (see Appendix 1).	2.2.1–2.2.2
Design management procedures	Ensure design conforms with brief; changes, cost controls and procedures are part of the project execution plan.	2.3.1–2.3.3
Design development	Development of full brief into sketch plan design, including spatial layouts. Complete Certificate of Readiness to Proceed to Detailed Design (see Appendix 1).	2.4.1–2.4.2
Equipment schedules	Prepare equipment schedules for Groups 2 and 3 equipment.	2.5.1 and Appendix 5
Detailed design	Conversion of sketch plan design into drawings and specifications. The level of detail at this stage depends on the procurement strategy.	2.6.1–2.6.2
Planning consent	Full planning consent must be obtained.	2.7.1–2.7.2
Tender documents	Bid documents to be prepared according to procurement strategy used.	2.8.1
Pre-tender estimate	A pre-tender estimate must be prepared for the main building contract under any procurement strategy. This will include: – up-to-date risk analysis and contingency; – up-to-date capital cost estimate; – updated running costs; and – confirmation that the programme is acceptable.	2.9.1
Stage completion	*Treasury re-approval may be required.* Certificate of Readiness to Proceed to Tender is required (see Appendix 1).	4.10.1–4.10.4

STAGE 3: TENDER AND CONTRACT

Stage	Main Activities/Information	Paragraph Number
General considerations	Need to refer to *CONCODE.*	3.1.1–3.1.5
Propriety	Tendering should be performed under standing financial instructions, proper delegations and allow for audit.	3.2.1
Tenders	*Tender lists* should be prepared within the appropriate *tender period* followed by tender assessment and *post tender negotiations* as appropriate.	3.3.1
Post-tender estimate	Update risk analysis and contingency, establish approved sum, confirm programme acceptable and check re-approval criteria.	3.4.1
Stage completion	Confirm validity of tender, complete a Certificate of Readiness to Award Contract, execute contract, complete NHS Estates contract and cost analysis forms where applicable.	3.5.1–3.5.3

STAGE 4: CONSTRUCTION AND EQUIPMENT SUPPLY

Stage	Main Activities/Information	Paragraph Number
Applicable to all procurement strategies	General advice for all forms of procurement.	4.1.1–4.1.5
Contract administrator	Confirm delegations and notify contractor.	4.2.1
Production information	Ensure necessary information is available to contractors when needed: – drawings; – specifications; – requests for information; and – approvals.	4.3.1
Progress monitoring	Project director to ensure appropriate monitoring systems are in place.	4.4.1
Programme management	Project manager to: check and monitor progress against contract programme. And issue monthly Project Progress Reports.	4.5.1
Quality control	Check work against the specification. Test materials.	4.6.1
Cost management	Project manager to: – Operate change control procedures. – Price variations. – Manage expenditure of contingencies. – Maintain latest estimated cost and cash flow. – Initiate action to avoid overspend. – Issue monthly Financial Status Reports. – Submit NHS Executive Monthly Report Form.	4.7.1
Payment	Agree interim certificates. Pay sums due on time.	4.8.1
Claims	Project manager to maintain record of potential claims, assess submitted claims and report on circumstances.	4.9.1
Record keeping	Project manager to: Maintain records of site activities: – daily diary; – site instructions; – inspection and test results; and – contractors' requests.	4.10.1
Procedures Applicable to Design and Build Contractor's design	Design team: – to check contractor's design drawings, materials and equipment against specification. Accept or require re-submission.	4.11.1

STAGE 4: CONSTRUCTION AND EQUIPMENT SUPPLY (CONT.)

Stage	Main Activities/Information	Paragraph Number
Procedures Applicable to Management Contracts Work packages Note: the nature of this type of procurement means that contracts are progressively awarded in phases. Therefore, some of these tasks may occur in stage 3 as well as stage 4.	Approve letting of work package sub-contracts. These cover: – work content; – contract terms; – price; – programme; – interfaces with other packages; and – certificates to award contract. After each subcontract, check: – latest estimated cost; – outstanding contract and design requirement; – design co-ordination; and – equipment deliveries. Prepare estimate of prime cost. Submit NHS contract form.	4.12.1–4.12.4
Procedures Applicable to Equipment Supply Contracts*	Groups 2, 3 and 4 equipment normally procured during operational commissioning. Group 2 equipment may need special consideration with design team and contractor at this stage.	4.13.1

* The Project Buyer performs those duties defined in the Project Execution Plan

STAGE 5: TECHNICAL COMMISSIONING AND HANDOVER

Stage	Main Activities/Information	Paragraph Number
Organisation of commissioning	Establish commissioning team. Contractor is responsible for technical commissioning. Commissioning programme required. Check programme and co-ordinate with overall programme. Witness commissioning.	5.2.1
Inspection and testing	Check quality of work, defects, completeness, and performance. Record results.	5.3.1
Other deliverables	Ensure all specified deliverables are delivered.	5.4.1
Certificate of Practical Completion and Stage Completion	Issue certificates required on completion.	5.5.1

STAGE 6: POST COMPLETION

Stage	Main Activities/Information	Paragraph Number
Claims and final accounts	Settle outstanding claims if possible.	6.1.1 and Appendix 3
Defects	Identify defects found after practical completion. Notify contractor/supplier. Expedite and monitor correction.	6.2.1
Final certificates	Issue final certificates. Release balance of retention monies.	6.3.1
Stage completion	Issue a final NHS Executive Report Form. Return all documentation to Trust.	6.4.1-6.4.2

Procedures

Stage 1: Full Business Case Leading to Approval

General

1.1.1 Work should not start on this stage until the Outline Business Case has been approved. The primary objective of this stage is to develop a fully costed preferred option.

1.1.2 Trusts are recommended to consult the NHSE on the scope of work required to produce a Full Business Case if there is any doubt.

Internal Project Control Organisation

1.2.1 It is important that the Full Business Case explains project organisation arrangements, showing how Trust management has effective control over its capital building programme. Guidance on the management arrangements is set out in *Project Organisation*. It is expected that by the time an Outline Business Case has been approved a project director should have been appointed by the Trust Chief Executive. A suggested appointment certificate for the project director is included in Appendix 1. The appointment of a project manager will normally follow soon after the appointment of the Project Director.

Reviewing the Strategic Context and Investment Appraisal Undertaken in the Outline Business Case

1.3.1 The business case must be reviewed to update information provided in the Outline Business Case and to develop the justification for the preferred option. This involves retracing steps 1–7 of the *Business Case Guide* as follows:

- strategic context;
- objectives and benefit criteria;
- generate options;
- benefits assessment;
- cost assessment;
- risk assessment; and
- identify preferred option.

1.3.2 The case for the preferred option must demonstrate, on current resources and market assumptions, that the recommended option can be afforded and how the costs would be met. This should cover both capital and service cash flows with at least five-year projections of NHS Trust balance sheets, showing the impact of new assets and income and expenditure statements incorporating capital charges. The sources and yearly incidence of cash should be identified, including that from land sales or private financing.

1.3.3 For major investments, alternatives under each of these headings must also be considered for the preferred option:

- In what ways could the option be postponed, accelerated or phased differently?
- Can the option be broken down into components which are each in themselves an option?
- If it can be broken down into smaller, phased schemes, is each component cost-effective on its own?
- Full assessment of feasibility will include consideration of the practical aspect of any substantial service charge (such as a change of use or an associated hospital closure). All cases with substantial workforce implications will need to address issues of recruitment, professional training, accommodation, redeployment and redundancy.

Employment of Consultants

1.4.1 Trusts need the professional input of consultants, including a project manager, designers and a quantity surveyor to develop the Full Business Case. The project director should follow the guidance in *CONCODE* to ensure that his or her duties are properly specified, that a formal agreement is entered into and that propriety is maintained. At this stage Trusts should not commit themselves to consultants for work beyond the completion of outline design. A break clause in consultants' contracts should be included to allow for any delay in approval or rejection of the Full Business Case, and to cater for alternative procurement methods, e.g. where consultants may be replaced by a contractor's own team or where a management contract is used.

Due Consideration of Private-sector Involvement

1.5.1 The involvement of the private sector should be considered for all schemes. Use of private-sector skills and management disciplines may increase effectiveness and efficiency and lead to better

managed risks. Further information and examples can be found in the *Private Finance Guide*.

Initial brief

1.6.1 The development of the brief is described in Appendix 4 and NHS Estates Health Building Note 2. It is prepared by a user panel overseen by the Project Director. The brief should be developed in sufficient detail to allow the outline design and the budget cost to be drawn up. It normally comprises whole hospital policies, departmental policies and accommodation schedules.

Site Investigation

1.7.1 Detailed site investigations are necessary to determine any physical conditions existing on the site which might have a significant effect on the budget cost.

1.7.2 The extent to which this is necessary will depend on the characteristics of the project. Project Directors should act on the advice of their Project Managers and designers.

Outline Design

1.8.1 The initial brief should be made available to the design team which will work up an outline design, normally on the basis of 1:200 room relationship drawings, until:

- the user panel is satisfied that all its requirements are included in sufficient detail; and
- the design team are satisfied that all essential requirements have been specified to enable them to proceed to design development in stage 2 and prepare the detailed specification for the project.

Contract Procurement Strategy

1.9.1 A contract strategy is a planned method of arranging for the work to be done. It determines the number and type of construction contracts to be placed, and, in particular, how much of the design should be carried out by consultants and how much by contractors. The following should be considered by the Trust at this stage:

- a preliminary decision on the contract strategy to be used, which may be reviewed at any time before the tender and contract stage;
- in reaching a decision on a contract strategy, the project director should rely on the advice of the project manager, ensuring that risks associated with the various procurement methods are addressed; and
- for more information on selecting an appropriate contract strategy, the project director and his/her team should refer to *CONCODE* and CUP Guidance Note 36.

Planning permission

1.10.1 Trusts are subject to planning regulations. The requirements of the local planning authority can have a significant effect on the project layout, its design and consequently its cost.

1.10.2 The project director, with the project manager and architect, should consult the planning authority at the earliest possible stage during the development of the brief, for example at the Outline Business Case. This will enable the brief to take the planning authority's requirements into account. As soon as the brief and the accompanying design allow, an application should be made for planning consent. The design team will prepare the application under the direction of the project manager. The status of this application and any restriction imposed by planners should be included in the Full Business Case.

1.10.3 Late discussions with planning authorities and other organisations can cause difficulty in finalising designs or disrupt programmes. Also, as local planning committees are democratic bodies, they may override the views of planning officers. The design team should recognise such potential difficulties and, where possible, order the programme of work and discussions with the authorities, to ensure that all necessary consultation can be completed and approvals obtained in good time. Local authorities are required to charge fees for planning applications.

Development Control Plan

1.11.1 The Development Control Plan (DCP) is a document containing text and drawings showing the existing configuration of buildings, their functional relationship with each other and the stages of future site development. Any existing DCP should be reviewed and the key drawings appended to the Full Business Case document.

Equipment Strategy

1.12.1 Equipment is vital to the successful operation of the project and often comprises a significant proportion of the budget. The project director should, therefore, prepare at this stage an equipment strategy, which will outline both the equipment budget and the method of procurement.

1.12.2 The strategy should identify:

- who will prepare the equipment budget, establish equipment requirements and, subsequently, purchase the equipment. This should normally be an experienced capital purchasing officer;
- the policy for the transfer of existing equipment into the new scheme (which will influence the budget within the scheme for the purchase of new equipment);
- the equipment procurement procedures to be followed to ensure compliance with current government policies and to maintain propriety;
- the reporting procedures of the equipping process through to operational commissioning;

- the policy for procuring new equipment for existing services pending transfer into any new facilities, i.e. to ensure compatibility – this is especially important for 'high tech' equipment; and
- a risk analysis of the factors which might lead to an increase in the equipment budget so that an appropriate contingency sum can be included within the approved sum.

1.12.3 Detailed advice on the equipping process and the setting of equipment budgets is set out in Appendix 5.

Risk Assessment and Contingency Provision

1.13.1 A rigorous risk assessment and allowance for contingencies should be made. See Appendix 2 for more detailed advice on preparing these.

Budget Cost

1.14.1 The budget cost is prepared on completion of outline design, site investigation and planning consultation. Cost forms must be submitted for all projects requiring approval by the NHS Executive. The pro-formas FB1–FB4 for this purpose are included in Appendix 1. The supporting costing information will have already been set out partly in cost forms OB1 and OB2 (see *Business Case Guide* and supporting costing documentation for the Outline Business Case).

1.14.2 The budget cost estimate must cover the whole of the anticipated capital expenditure and VAT on the project including:

- departmental costs;
- on-costs;
- works costs (total of departmental and on-costs);
- location adjustment;
- fees;
- non-works costs;
- equipment; and
- contingency.

1.14.3 Once approved, the total of these costs will form the 'Approved Budget Cost'. Appendix 2 provides detailed information on the make-up of the estimate, including the basis of the risk assessment which will determine the contingency sum. Appendix 5 provides guidance on establishing the equipment budget.

1.14.4 The NHS Executive will need to estimate the total outturn cost for the scheme and, for this purpose will assess an additional amount for inflation. The Approved Budget Cost *plus* the allowance for inflation and VAT will determine the forecast outturn and should be used for any publicly-announced cost.

1.14.5 Any financial overspend will have to be financed within the approved External Finance Limit (EFL). No additional funds will be made available.

Running Costs

1.15.1 Further detailed work in developing running cost estimates should be carried out. If a costing model has not previously been developed, this may involve the design of the model on computer. Running costs estimates should be corroborated by using alternative methods of estimating and wide consultation.

1.15.2 Sound estimates for annual running costs are more important than capital costing, because they are committed costs which affect prices paid by purchasers in the future. Over the life of a scheme they usually have a more significant effect on net present costs than capital expenditure.

Planning for Post-Project Evaluation

1.16.1 Post-project evaluation is mandatory for all building schemes with a total cost exceeding £1 million, and is an activity recommended for all schemes. Initial work must be undertaken to ensure effective evaluation later on. Detailed information can be found in the Post-Project Evaluation.

Obtaining NHS Executive and Treasury Approval if Required

1.17.1 Schemes above the advised cost threshold should be formally approved by the NHS Executive (and Treasury where appropriate), before proceeding to the next stage. The cost threshold for schemes which require NHS Executive and Treasury approval will be advised by the NHS Executive from time to time.

1.17.2 For all schemes submitted to the NHS Executive for approval, the scheme name must remain consistent throughout the life of the project. All schemes approved by the NHS Executive will be subject to formal monitoring procedures.

1.17.3 Schemes above the Treasury threshold will be subject to a further approval point. This will be at the end of the design stage when the traditional procurement route is followed. For alternative procurement strategies, an appropriate point will be agreed by the NHS when the Full Business Case is approved.

Stage Completion

1.18.1 On receipt of approval, initial project monitoring reports should be submitted to NHS Estates (see Appendices 7 and 8).

Stage 2: Design

General

2.1.1 The purpose of this stage is to convert the initial brief into a full brief and the outline design through sketch design to detailed design. The detailed plans and specifications should fulfill the requirements of the brief, be of high quality aesthetically and be economical to build, maintain, and operate.

2.1.2 The design team should operate under the leadership of the lead consultant, usually the architect, who has the responsibility for co-ordinating the input of the rest of the team. The project director, through the project manager, must ensure that during this process the integrity of the brief is maintained, the project remains within the budget, and the process is completed to programme.

2.1.3 Quality of design is crucial to the success of a building and will entail careful consideration of the aesthetic appearance, the internal ambience, and the functional efficiency. Simply specifying functional requirements may result in an overall scheme which not only disappoints, but proves to be costly in the longer term because of poor-quality materials necessitating excessive maintenance or early replacement together with possible disruption to the Trust's operations. The Trust should include in the scheme a provision for interior design, landscaping and artwork to enhance the quality of the environment.

2.1.4 The project director should ensure that the design team is familiar with the standards issued by NHS Estates – Health Building Notes, Health Technical Memoranda, Health Facilities Guidance, Equipment Notes, Activity Database, etc. Some standards, for example those dealing with fire prevention and hygiene, are mandatory. Also, use of a standard design system, such as Nucleus, may be economic and efficient in producing design solutions. Project Directors and their consultants may obtain advice from NHS Estates on the use of the above documents and on the process for choosing an architect and a design team to ensure that a building of appropriate quality is delivered.

Brief Development

2.2.1 Design development may continue in tandem with the development of the full brief. But any design development to sketch plan stage done during the preparation of the full brief must be completed and checked for compliance with the brief and other constraints before detail design is undertaken. The brief should be developed to completion by the user team producing data sheets based on the accommodation schedules produced in stage 1. See Appendix 1 for a suggested format for a brief acceptance certificate.

2.2.2 It is important for the user panel to recognise that the brief is now 'frozen' and, henceforth, any proposed changes must be subject to formal change control procedures.

Design Management Procedures

2.3.1 The purpose of design management is to ensure that:

- designs comply with the brief, with the brief itself not being altered except through formal change control procedures;
- changes are strictly controlled and costed;
- options are considered where practicable and appraised;
- designs are well co-ordinated;
- design is completed to programme;
- cost and progress reports are issued at suitable intervals with a minimum of one at mid-stage and one at stage completion; and
- the project director and the user panel are kept informed through meetings and presentations.

2.3.2 The following will apply particularly for traditional procurement strategies:

- The design team is responsible for the technical content of the design.
- the project manager has no responsibility for the technical content except to ensure that it complies with the brief, but must have authority over the design team in matters of design management.
- the procedures for design management are included in the project execution plan – see Appendix 6.

2.3.3 The cost estimate produced by the quantity surveyor must be regularly updated as the design is progressed, through sketch design and into detailed design, so that the progress reports reflect the up-to-date position. Refer to Appendix 3 for more advice on cost management.

Design Development

2.4.1 This involves the development of the full brief and outline design into sketch designs through the following procedures:

- Sketch plan designs should be presented to the user panel to explain how the brief fulfills their requirements. They should be encouraged to suggest anything which will improve operability for consideration within the change control procedures. These sketch designs should include:

  (a) updated spatial layouts, including circulation and communication spaces and room layouts, inclusive of all exposed engineering services based on the information defined in the activity database.

  (b) major plant and equipment installation, site access and contractors' areas.

- If a project is being developed in stages, design stages will overlap but care must be taken to ensure that interfaces between the stages are co-ordinated.

- The range of design options for implementing the brief should be formally considered by the design team. The selection criteria include: estimated construction and running costs, risk factors, programme constraints, operational factors, and quality including aesthetic appearance. The project manager should ensure that the results of the recommended options are recorded by the design team.

- Final decisions may be taken by the project director or delegated to the project manager or the design team depending on their significance. The project manager should draw the attention of the project director to design options which affect whole hospital operations, aesthetic appearance, capital and running costs, programme, or operability.

2.4.2 A Certificate of Readiness to Proceed to Detailed Design, signed by the project manager and project director, must be completed for all projects. It attests to the completeness, adequacy and integrity of the brief and to the cost estimate and programme based on it. A suggested format is provided in Appendix 1.

Equipment Schedules

2.5.1 Equipment schedules for Groups 2 and 3 equipment, based on the agreed room data sheets/layouts, should be prepared at this stage. The items available for transfer should be identified so that schedules for new equipment can be prepared and costed, to ensure that the equipment budget established at the Full Business Case stage will not be exceeded.

Detail design

2.6.1 Detail design comprises converting the sketch plan design into production drawings and specifications which are in sufficient detail for contractors to prepare a tender, construct the buildings, install services and purchase client equipment. Although the process is the same for all contract procurement strategies, it is done by different people and at different times, depending on the strategy selected and may overlap stages 3 and 4. Different procedures will apply in each case.

2.6.2 Procedures for this stage are as follows:

- For traditional contracts, the detail design must be completed before tender.

- In fast-track contract strategies, design overlaps construction.

  (a) For design and build, both the design and construction are managed by the contractor. The project manager and the project director or the professional adviser should assess the suitability of the contractor's design.

  (b) For a management contract, or construction management contracts, the detail design is undertaken progressively, after the appointment of the management contractor, or construction manager, and released as required for each work package. However, it is important that the brief is complete and frozen before the management contract is let. Where final detailing is done by the contractor or sub-contractor, it must be clear that they are financially and contractually liable for their own design work.

- Poor co-ordination of building services, both between the different services and with the building itself, is a common cause of design changes, resulting in extra cost and delay. The project manager must ensure that the design team has prepared co-ordination drawings and that these take into account the requirements of major equipment installations.

- The quantity surveyor is normally responsible for keeping the cost estimate up to date as the design progresses and for producing bills of quantities. It is recommended that bills of quantities are also prepared for mechanical and electrical engineering services, preferably by the quantity surveyor who needs to be suitably qualified.

Planning consent

2.7.1 Obtain full planning consent, building regulations and other statutory approvals before tenders are invited for either the main contract or other significant contracts. Any public enquiry must have been satisfactorily concluded. The planning

authority should be consulted during design development so that their requirements can be taken into account.

2.7.2 The contractor is sometimes made responsible for obtaining planning consent and other statutory requirements in a design and build or a management contract. In that case, Trusts may proceed to stage 3 without consent having been obtained, so long as the risks of failure to obtain it, or of substantial changes being required, are provided for in the contract.

Tender Documents

2.8.1 During the preparation of the tender documents, the following should be considered:

- The documents should be prepared by the design team under the direction of the project manager.
- The mandatory policies in *CONCODE* must be complied with. The project manager and design team should recommend to the project director the most appropriate form of contract.
- The best practice guidance on contract documents given in *CONCODE* should be referred to.
- The drawings and specifications must be appropriate for the contract strategy.

  (a) For a 'traditional' contract or 'management' contract work package, they will be complete and comprehensive.

  (b) for a 'design and build' contract, there will be performance criteria, standards, and quality requirements, with other details such as layout drawings depending on the extent of contractor design. These must be comprehensive to avoid the risk of the contractor, who will design for greatest economy, producing sub-standard facilities.
- The specifications must include whatever tests, samples or mock-ups may be required during the course of the work to assure quality and compliance with the specification. This is particularly important for Group 1 and 2 equipment items, which must be tested for performance, as part of the commissioning procedure, before acceptance.

Pre-tender Estimate

2.9.1 Trusts must prepare a pre-tender estimate on completion of the tender documents, before proceeding to stage 3, using the following guidelines:

- A formal review of the capital and running costs and of the programme must be made, including an update of the risk analysis and contingency allowance. This should be checked against any constraints in the Full Business Case.
- If the review indicates that costs exceed the figure approved by the NHS Executive, the design should be reviewed for savings, otherwise re-approval will be necessary (see para. 2.10.3).
- The pre-tender estimate should be preserved for future reference (refer to Appendix 3 – Cost Estimating) and included in a progress report to the NHS Executive (see Appendix 8).
- For management contracts see paragraph 4.12.1.

Stage Completion

2.10.1 For the main construction contract, a Certificate of Readiness to Proceed to Tender is required. A suggested format is given in Appendix 1, but Trusts may need to modify the form to suit the particular circumstances of a project, particularly the impact of a non-traditional contract procurement stategy.

2.10.2 The certificate contains assurances from the design team that the design:

- has been completed to the degree appropriate to the contract strategy;
- complies with Building Regulations and Codes of Practice, including Health Service Fire Standards, mandatory standards published by NHS Estates, EC or British Standards, including the requirements of environmental authorities where appropriate; and
- fulfills the requirements of the brief.

2.10.3 For schemes using conventional lump sum contracts in excess of Treasury delegated limits or where the estimate exceeds that approved, re-approval on completion of the design stage is mandatory and a submission to the NHS Executive is necessary. For alternative procurement strategies above delegated limits, reapproval will also be necessary, at the point for submission agreed with the NHSE on completion of stage 1.

2.10.4 The additional conditions for resubmission at any stage during the life of a project are described in the introduction section to this document.

Stage 3: Tender and Contract

General

3.1.1 The general procedures for tendering and awarding contracts apply to both works contracts and for the purchase and installation of Group 1 and the installation of Group 2 equipment. Group 2, 3, and 4 equipment should be obtained using the Trust's normal purchasing procedures, except that the specification and delivery dates should be established by the project team, and the purchase requisition approved by the project director. The project director, on the advice of the project manager, should decide which purchases fall within this category.

3.1.2 Nothing may be charged against the project budget unless it has been approved by the project director. Trusts should refer to *CONCODE* for more detailed advice on the tendering process, including mandatory NHS policies, alternative contract forms, and guidance on procedures.

3.1.3 The same basic procedures apply to all contract procurement strategies. For management contracts the contractor will be placing contracts (or sub-contracts) for work packages after the main contract has been awarded. (These are dealt with in stage 4 Construction and Equipment Supply.)

3.1.4 There will often be some overlap between the design, tender and contract, and the supply and construction stages. The project manager and the design team must integrate the procurement of both works and equipment into the overall project programme. For example, it may be necessary to order some Group 2 equipment early to meet delivery dates or some equipment contracts may be placed after the main works contract.

3.1.5 The formal post-tender estimate and the mandatory completion of the NHS Executive Contracts and Cost Analysis Report (see Appendices 7 and 8) apply only to the main works contract.

Propriety

3.2.1 As NHS Trusts are public bodies, the policies governing public procurement will apply and they must have procurement procedures in place complying with those policies, whether they have capital works projects or not. The two most important policies are the maintenance of propriety and the award of contracts on the basis of best value for money.

3.2.2 Implementation of these policies should be as follows:

- Propriety should be maintained through compliance with procedures providing checks and balances, placing the responsibility for contracts on more than one person, ensuring confidentiality and equal treatment of bidders.
- There should be formal delegations of financial authority for the approval and letting of contracts.
- Major works contracts should be approved by the project investment decision maker (usually the Trust Board);
- Project directors should refer to *CONCODE* for mandatory NHS Executive policies dealing with propriety.
- The project director must ensure that project managers and other consultants maintain the same high standards of propriety.
- The project manager should maintain procedures, and check those of other consultants.
- Internal audit of these procedures should be a specific part of the annual internal and external audits of Trusts, not simply a requirement of one stage of a capital project. As long as a recent audit has confirmed compliance, and the project director is satisfied regarding the procedures of consultants, this requirement will have been fulfilled.

Tenders

3.3.1 When considering the tendering process, it is essential to refer to *CONCODE* and pay regard to the strict codes of practice in the construction industry. Tendering can be divided into four component parts:

(a) Tender lists. These should be compiled with regard to the following:

- Subject to EC rules when they apply, Trusts, in consultation with their professional advisers, should invite appropriate firms to pre-qualify and draw up a tender list of those firms able to meet all the requirements.
- Only firms with appropriate experience and sufficient financial, technical, and human resources should be permitted to tender. NHS Estates holds a database of contractors and consultants who have worked for the NHS on major schemes. Their performance on contracts

on which they have been engaged will be available on application. It is important for project directors to complete and send in the assessment forms in Appendix 9 for updating this information. Some Trusts may have their own contractor and consultant registers.

- Information on previous performance should be sought prior to interviews or presentations; technical assessments should always be used, normally involving the project manager and, if appointed, the professional adviser. Poor contractor performance or bankruptcy can have a devastating effect on the outcome of a project.

- The project manager and project director should prepare tender lists, in accordance with Trust standing financial instructions and *CONCODE* procedures, and submit the list to the Investment Decision Maker for approval.

- Tender costs are not recoverable from Trusts, except by special agreement for some types of design and build contracts, in which contractors are required to do a substantial amount of design prior to tendering, or where private finance is used.

(b) The tender period. This should be long enough to enable contractors to price the work properly. The length of time will depend on the type of contract and its complexity. It will be longer for design and build than for a traditional strategy because the contractor has to make preliminary designs before he or she can estimate the price.

(c) Tender assessment. This should be completed as follows:

- Tenders should be assessed by a project tender board under the direction of the project manager.

- An assessment report and recommendation should be given to the Project Director, including all aspects of the tenders – compliance, technical, programme, price, and resources.

- For a major works contract, tenderers are usually asked to provide a method statement describing how they plan to set about the work and what resources they will use; this is a good guide to their capability.

- The professional adviser, if one has been appointed, should be consulted by the project director before the contract is let.

- Assessment procedures are described in more detail in *CONCODE*.

- The principle should be to award the contract to the firm whose tender offers best value for money. For a traditional contract strategy, this is usually but not always the same as the lowest price.

- The tender documents should specify the criteria which will be used in the assessment; these may be restricted by EC rules where for applicable contracts. If the lowest tender is not recommended, the reasons must be justified and be carefully recorded.

- The investment decision maker should approve any large contracts before the contract is awarded.

(d) Post-tender negotiation.

- This is a process which can give added value to a contract. It is essential that it is done ethically and in a controlled way under the direction of the project director.

- A Trust may review the most favoured tender with the contractor to see whether there are any changes which are mutually beneficial before the contract is awarded. It could involve, for example, removing qualifications in the tender, or considering suggestions from the contractor to improve buildability, or improvements to the programme; any such negotiation must not impair the validity of the tender within the overall competition.

- The aim is to make sure that, when the contract is signed, all matters arising from the tendering process have been financially resolved to the satisfaction of both parties. It must never be a Dutch auction or just an attempt to beat down the price for the job. Tender reductions may be achieved by reducing the specification, elimination of work from the project or seeking more efficient construction methods.

Post-tender Estimate

3.4.1 This stage should include:

- an update of the cost estimate after assessment and when the recommended tender price is known. The risk analysis and contingency allowance should be reviewed as part of this process, because many of the original risk factors – for example, design development and tender price levels (which depend on the state of the construction industry at the time) – will no longer apply. This estimate becomes the formal approved sum in the construction cost plan;
- checking the project against all the other constraints defined in the Full Business Case, including running costs, the discounted cash-flow calculations and re-approval criteria; and
- identifying any savings necessary to stay within budget – for example, by simplifying some of the design or reducing the scope of the project. Significant changes to the contract should be avoided as this may cause problems for other aspects of the scheme. Any such steps must be dealt with through the change control procedure and agreed with the user panel if they alter the brief.

(A variation in project scope or a cost above that approved, will require re-approval from the NHS Executive and this must be done before the contract is signed. New tenders may be required if the scope of work has been altered significantly.)
- establishing the approved sum, based on the agreed tender plus any client contingency allowance.

Stage Completion

3.5.1 Stage completion entails:

- Before the contract is awarded, the project director, through the project manager, must ensure that the contract documents have been brought up to date to include any agreed post-tender changes.

- The Trust must confirm that it is in a position to make the site available, and that the contract administrative arrangements are in place.

- The contractor must confirm that the tender remains valid if the normal acceptance period stipulated in the contract is exceeded.

- A Certificate of Readiness to Award Contract must be completed in accordance with the Trust's standing orders.

- The project director must ensure that a total funding package is available to meet the approved sum, including contingency and allowances for inflation. This is particularly important where external funding or private finance is involved and could be cash limited.

3.5.2 When all these arrangements are completed, the contract may be awarded, and the contract formally executed.

3.5.3 Following the award of the contract the project director, through the project manager as appropriate, should:
- notify unsuccessful bidders;
- place a notice in the EC Journal;
- update the project execution plan; and
- complete the NHS Executive post-tender report for all projects exceeding the reporting threshold (see Appendices 7 and 8).

Stage 4: Construction and Equipment Supply

Part A – Applicable to all Contract Procurement Strategies

General

4.1.1 The objective of stage 4 is to secure the satisfactory completion of the project on time, within budget, and to the specified quality standards. During this stage, construction professionals carry out their duties. The project director stands back, monitors their performance and is ready to intervene, through the project manager, if it becomes necessary. The project director's main tasks in respect of supply and construction are:

- to give decisions and approvals which are above the delegated limits of the project manager;
- to be aware of cost, progress, and any potential problems, and ensure that corrective action is taken where necessary;
- to communicate to the project manager any requirements or concerns which need to be raised by the Trust, keeping in mind that changes to the design or specifications are the major cause of time or cost overruns;
- to ensure that no changes are initiated by the Trust itself, unless they are absolutely essential. The only changes which should be accepted without challenge are those due to changes in legislation, those required on health and safety grounds, and those which, if they are not made, would prevent the project from achieving its objectives. Whenever possible, such changes should be implemented post contract in order to avoid disruption to the on-going contract. Other changes which are considered desirable but not essential should also be deferred and re-considered following completion of the contract. Refer to Appendix 3 for more information on change control procedures.

4.1.2 During this stage the project director must also ensure that plans are developed, which will be available in time for:

- operational commissioning, including equipping, by the Trust;
- supply of start-up stocks of operational consumables and of spare parts;
- operations staffing and staff training;
- occupation.

4.1.3 Refer to *Commissioning of a Health Care Facility* for more detailed guidance.

4.1.4 The general procedures for managing contracts apply to all procurement strategies, but some alternative procedures are unique to non-traditional forms of procurement. To take account of the main alternative methods, stage 4 procedures are divided into four parts:

- procedures applicable to all contract procurement strategies;
- procedures applicable to design and build;
- procedures applicable to management contracts;
- procedures applicable to management contracts; and
- procedures applicable to equipment supply contracts.

4.1.5 Project directors should ensure that the project managers and contractors are familiar with and comply with Health and Safety regulations applicable to building sites, such as the Temporary or Mobile Sites Construction Directive. The Health and Safety Executive can provide advice on the regulations.

Contract Administrator

4.2.1 Construction contracts are administered on behalf of the Trust by a person appointed as the 'contract administrator'. A similar position – usually called the 'engineer' – may apply in civil engineering contracts and in equipment contracts, particularly those for both supply and installation.

4.2.2 Procedures regarding appointment of the contract administrator and the role of the appointee are as follows:

- The contract administrator's role and duties are defined in the contract. These are of two kinds:

  (a) to inspect work and instruct the contractor on behalf of the Trust, in accordance with the terms of the contract. Performance of these duties is subject to delegated authority, and the contract administrator is responsible through the project manager to the project director;

  (b) to give decisions in a fair and impartial 'quasi-judicial' manner on contract issues. When the contract administrator is acting in a quasi-judicial role, the project director through the project manager may state the Trust's position, but must not issue instructions with the intention of influencing the contract administrator's decisions. The contract administrator must notify the project director before issuing a decison

which exceeds his or her delegated authority.

- The lead consultant (usually the architect in traditional procurements) should normally be appointed as contract administrator but the project manager may undertake the role. The appointment of the project manager as contract administrator must not dilute the responsibility of the design team for the integrity of the design and compliance with specifications. It means that changes or instructions initiated by them are reviewed and issued by the project manager.

- The contractor must be formally notified of the name of the contract administrator by the project director. The contract administrator's delegated authority is confirmed to him or her in writing. The extent of this delegation will be included in the project execution plan – see Appendix 6 – and will include his or her authority in respect of:

  (a) utilisation of provisional sums;
  (b) ordering changes; and
  (c) ordering acceleration to mitigate delays.

- All formal communications with contractors must be through the contract administrator.

Production Information

4.3.1 This is the information required by the contractor to carry out the contract. The bulk of the information is contained in drawings, bills of quantities and specifications in the contract documents but the following will apply:

- In a traditional contract strategy, the detailed design should be completed before the invitations to tender are issued and the completion of the Certificate of Readiness to Proceed to Tender confirms this; any drawings issued after the contract has been let constitute a change and may have cost and time implications.

- The project manager should manage the design team to prevent from initiating unnecessary changes. Some changes, such as those arising from late equipment details or non-availability of components, may be unavoidable and should be managed through the change control procedure.

- The project director must make sure, through the project manager, that:
  (a) all production information is prepared by the design team, to meet the contractor's programme requirements so that it is available to the contractor in good time; and
  (b) any variations arising from the issue of production information after a contract has been let are managed through the change control procedure.

Progress Monitoring

4.4.1 The project director should ensure that appropriate systems are in place in order that he/she is fully informed on time, quality and cost. It will be the primary role of the project manager on a day-to-day basis, reporting to the project director on a formal basis (usually monthly) and by exception where particular issues arise.

Programme Management

4.5.1 Each contract, when awarded, will contain its own programme, which will be compatible with the project programme, and which will list key milestone dates. The project manager is responsible for maintaining the overall project programme and for monitoring actual progress against it. This should be managed as follows:

- A contractor will usually be required to submit a master programme for the contract work within a short period after award of contract, for examination by the project manager. This may be used for subsequent monitoring.

- Certain circumstances will entitle a contractor to have an extension to the completion date. These circumstances, which are detailed in the contract, would be beyond the reasonable control of the contractor, such as *force majeure* and changes instructed by the contract administrator. If such circumstances occur, the contractor will submit a claim for an extension of time to the contract administrator who will award such extension as is reasonable in the circumstances; this is one of the quasi-judicial functions of the contract administrator. The contract programme is then amended accordingly.

- The project manager must monitor each contract against its approved programme, and report against it in a monthly Project Progress Report (PPR) to the project director. The PPR, which also includes a monthly cost report, is an important part of the management of the project. It enforces a discipline on all parties to make sure that work is proceeding to programme, it also enables the project director and the project manager to take corrective action if problems become apparent. The project manager should give an executive summary of it to the chief executive officer and, where appropriate, the Trust Board. (Refer to Appendices 7 and 8 for a more detailed description of monitoring requirements.)

- If delays become apparent, the project manager is responsible for initiating corrective action. This action may have cost consequences, to be priced by the quantity surveyor, and could affect the completion date of the project and its financial viability. The project manager should consider the available alternatives and make a formal recommendation to the project director. The consequences must be included in the cost estimates.

Quality Control

4.6.1 There are two main requirements:

- to check that all construction work done by contractors is in accordance with the drawings and specifications. This is the contract administrator's responsibility but in practice it is carried out by representives of the design team, who ask the contract administrator to issue necessary instructions to the contractor. There may also be a clerk of works appointed, based on the site, who has delegated authority to act as inspector on behalf of the client. The clerk of works has no authority to change the specifications, only to see that they are complied with; and
- to ensure that the inspection and testing procedures in the specification have been complied with.

Cost management

4.7.1 Management of the overall cost of a project is a function of the project manager, who is responsible to the project director. The procedures for this are as follows:

- to operate change control procedures. Although cost reports, estimates, and forecasts are prepared by the quantity surveyor, the project manager is directly responsible for understanding the cost consequences of any decisions and for initiating corrective actions if necessary;
- to maintain an up-to-date estimated cost and cash flow;
- to manage expenditure of contingencies;
- to initiate action to avoid overspend. The project programme, which includes all contracts, and the programmes and terms of payment for individual contracts, must be compatible with the approved funding arrangements. If the forecast cash flow should vary from that approved, the Trust must notify the NHS Executive immediately for schemes approved by the NHS Executive;
- to issue a monthly financial status report. This report is prepared by the quantity surveyor with comments by the project manager, and is submitted as an integral part of the Project Progress Report (PPR). It must include the results of monitoring by the project manager of the overall cost of the project, including each individual contract, against the approved budget. Refer to Appendix 3 for information on cost management procedures to be included in the project execution plan and to Appendix 7 on monitoring; and
- to submit the NHS Executive Monthly Progress Report for all projects exceeding the reporting threshold. The project manager is responsible for completion of the report for the approval of the project director, but in practice it will be prepared by the quantity surveyor. Refer to Appendix 7.

Payment

4.8.1 Trusts, as the contracting parties, are responsible for paying contractors and suppliers the interim and final payments to which they are entitled. These should be made as follows:

- In most construction contracts, the quantity surveyor will agree valuation of interim payments due during the course of the work, which the contract administrator will consider, and if agreed will issue a payment certificate.
- Trusts should pay the amount certified on time.
- The project director, on the advice of the project manager, should keep the Trust finance department aware of future payment requirements by means of the updated cash flow forecast.

Claims

4.9.1 The terms of the contract allow contractors to claim additional payments in certain circumstances defined in the contract conditions. These are generally due to either:

- risks occuring which are client risks under the contract, such as unforeseeable ground conditions, the ordering of additional or varied work (when a design and build contract is used it is possible for some of these risks to be transferred to the contractor);
- failure by the Trust to comply with its obligations under the contract. This is often expressed as disruption of the contractors' work programme due to changes or late information.

The conditions of these claims, and the way they should be dealt with, are as follows:

- Assessment of claims, both as to validity and amount, is a responsibility of the contract administrator.
- Contractors are obliged to notify the contract administrator of a claim within a limited time after the occurrence of the events which give rise to it, and to provide full details as soon as practicable thereafter. The project manager should keep a record both of notified claims and of expected claims which have not yet been notified.
- Claims which are valid under the contract should be ascertained as quickly as possible to facilitate prompt payment. Circumstances when interim payments may be made are described in *CONCODE*.
- The contract administrator may have to make extensive and detailed enquiries before the validity and cost consequences of a claim can be determined. However, as soon as a claim or potential claim is identified, the project

manager must include it in the Financial Status Report, using the best available estimate of the consequences.

- Whenever recourse to arbitration or litigation is contemplated or undertaken, this must be noted in the comments section of the NHS Executive Monthly Progress Report. It is recommended that the project director formally notifies the NHS Executive of the situation and seeks advice. Use should be made of the experience of the professional advisers or sources advised by the NHS Executive.

Record keeping

4.10.1 Maintenance of good records of site activities is a responsibility of the project manager. The project director should ensure, through personal inspection, that this is carried out thoroughly. These records are necessary to provide an audit trail and information for the post-project evaluation. They are essential for the assessment of claims, and particularly for any disputes which go to arbitration or litigation. In any dispute, the side with the best and most complete records is in the strongest position. Records must include:

- a daily diary, maintained by the clerk of works;
- all site instructions and change orders;
- inspection and testing results;
- drawing issues and revisions;
- requests for information or instructions by the contractor;
- any circumstances which might give rise to a claim; and
- other matters which the project manager considers significant.

Part B – Procedures Applicable to Design and Build

General

4.11.1 There are several versions of a design and build contract. Trusts should refer to *CONCODE* for a description of their characteristics and the circumstances under which they are appropriate. They have the following characteristics:

- Detailed design is the responsibility of the contractor, rather than the design team and in some cases the contractor is also responsible for part of the conceptual design.
- A design and build contract specifies the performance and quality criteria which the contractor must meet. The contractor is responsible for the design meeting those criteria.
- The Trust's consultant designers, who write the performance specification to give effect to the brief, are still necessary during a design and build contract, but their responsibilities are different from those for a traditional contract.
- The trust's consultant designers examine the contractor's designs for compliance with the specifications. This examination should include:

  (a) drawings v. specification;
  (b) materials v. specification;
  (c) equipment v. specification; and
  (d) contract sum analysis v. approved sum.

- The project director should, through the project manager, see that the Trust's consultants do not impose their design preferences on the contractor. If any such preferences are to be enforced they must be included in the specifications.

Part C – Procedures Applicable to Management Contracts

General

4.12.1 Trusts should refer to *CONCODE* for guidance on management contracts, for the circumstances when this strategy is appropriate, and the forms of contract:

- The construction work is divided into work packages which are placed as separate contracts (or sub-contracts) co-ordinated and managed by the management contractor.
- The management contractor may also provide some common site services, such as accommodation, cranage and security.
- The Trust pays the management contractor's fee plus the actual cost of the work packages.
- The management contractor is responsible for defining the content of, and interfaces between, the work packages.
- The project manager must ensure that the design is co-ordinated with the packages, both as to content and timing, and must check the management contractor's proposals.
- Each work package is awarded subject to the approval of the project director on the advice of the project manager. Each tender is subject to the general procedures applicable to this stage, but the aspects mentioned in para. 4.12.3 must be addressed in particular.

4.12.2 The reason for using a management contract is usually that it permits an earlier start to construction before the detailed design has been completed. The disadvantage may be a lack of certainty in the final cost. The consequences are an overlap of the stages of a traditional contract and that:

- the design only has to be completed for each work package when that package is tendered, with separate certificates of readiness to proceed to tender provided for each package;
- the procedures for calling tenders for the individual work packages and assessing them is undertaken by the management contractor, not the project manager; and
- the post-tender estimate prepared after award of the management contract is less robust because the final cost for the work will only be known after the last work package has been let.

4.12.3 The management contractor will prepare an Estimate of Prime Cost (EPC) in conjunction with the design team. The EPC will be the control figure against which the individual work package tenders will be invited and must be fully reconcilable with the approved budget cost. All tenders must be subject to formal recommendation and report. Savings arising from the receipt of package tenders within the EPC will form a separate reserve out of which any justifiable increases in the cost of other package tenders can be offset. Any resultant balance must remain under the control of the project director. Any increase in total cost must be subject to formal reporting and approval procedures and reasons for increases over the EPC identified. Increases in cost arising from tender indexation should be consistent with promulgated NHSE guidance.

4.12.4 The availability of funding to meet any increase in tender costs must form part of the reporting process.

4.12.5 For a management contract, it is important that the monthly financial status reports (see para. 4.7.1) embrace the complexities of this method of procurement involving reporting on a series of separate work packages.

Part D – Procedures Applicable to Group 2, 3, and 4 Equipment Contracts

Equipment Purchase

4.13.1 The purchase of Group 2, 3 and 4 equipment will normally take place during the operational commissioning period through the Trust's normal purchasing procedures (see *Commissioning a Health Care Facility*). However, care should be taken at this stage to ensure that Group 2 equipment which has significant design implications is discussed fully with the design team and contractor to ensure compatibility, delivery at the appropriate time and proper inspection and testing.

Stage 5: Technical Commissioning and Handover

General

5.1.1 This stage deals with technical commissioning of the building, services, and equipment. The project director must co-ordinate all activities to ensure that the Trust is ready when the project is handed over. The characteristics of this stage are as follows:

- There are two different aspects to the commissioning of a health building project:

  (a) technical commissioning of the building, services, and equipment to ensure that it complies with the quality and performance specifications and that all systems operate satisfactorily. This is normally undertaken under contract managed by the project manager assisted by the design team and witnessed on behalf of the trust as the client.

  (b) operational commissioning by the Trust, covering the process of preparing to operate the completed facility, to provide the health care services for which it was designed, and maintain and operate the building services. This is a separate process described in *Commissioning a Health Care Facility*.

- Technical commissioning requirements will have been considered in the design stage and included in the specifications for construction and equipment contracts. It is particularly important that the performance of equipment and of M and E services are specified adequately, including any tests on completion which will form part of the commissioning process.

- Projects may be taken over in sections if the main contract provides for it. If there are several contracts, they may be commissioned and handed over for operation at different times. This will have been stated in the brief and included by the project manager in the project programme.

Organisation of Commissioning

5.2.1 The organisation of commissioning should take account of the following points:

- Commissioning is the responsibility of the contractor, except in the case of Group 2 and 3 equipment contracts.

- The project manager should require the contractors and suppliers (if there are more than one) to provide commissioning programmes and method statements indicating when and how they propose to commission their work, in accordance with their contract programmes and specifications.

- The project manager, supported by the design team, will check these programmes and co-ordinate them with the overall project programme; they will be accepted if satisfactory or returned for amendment if not.

- The project director must make sure that the programme is co-ordinated with that for operational commissioning.

- The team responsible for supervising commissioning will include representatives from the design team and from the user panel; the project director should agree its composition with the project manager.

- Individual members of the user panel should witness the commissioning of those parts of the project which they will be responsible for operating so that they can satisfy themselves that it is suitable for operation, and draw the attention of the project director and project manager to any concerns; they must not instruct the contractor themselves.

Inspection and Testing

5.3.1 The process of commissioning is one of inspecting the completeness and quality of building work for compliance with the specification, and of testing equipment and systems for satisfactory operation and compliance with specified performance criteria. Important elements of this process are:

- testing integrated systems, which may comprise components from several sources, to ensure that the system as a whole performs satisfactorily;
- maintaining records of inspections and of commissioning test results by the project manager to be given to the project director as a permanent record on completion of the project;

- listing minor defects which do not prevent the facility from being used satisfactorily on a 'snag list' during commissioning. These do not prevent the issue of a Certificate of Practical Completion, but are left to be corrected later. The project manager must make a formal list of these, which is attached to the Certificate when issued. The project director and user panel should draw any such defects which they notice to the attention of the project manager; and
- ensuring that only those items which do not comply with the specifications are regarded as unacceptable. A standard of performance may not be required during commissioning which was not covered by the contract in fulfilment of the brief.

Other Deliverables

5.4.1 A contract is only complete when all the specified deliverables have been supplied. Typically these include:

- equipment spare parts;
- operating and maintenance manuals; and
- as-built drawings, including a Health and Safety file – their technical content should be checked by the design team to ensure completeness.

The following should be observed:

- It is recommended that delivery of these items should be included in the contract programmes.
- Their receipt should be made a condition of a Certificate of Practical Completion. If they are left until later, it can affect the efficiency of operations, and it may be difficult to persuade the contractors to give them adequate attention.

Certificate of Practical Completion and Stage Completion

5.5.1 A Certificate of Practical Completion is issued by the contract administrator when the contract works have been satisfactorily completed and commissioned, subject to a snags list. The form and term used for this certificate may differ depending on the form of contract used, but the result is essentially the same:

- The issue of a Certificate of Practical Completion has important contractual and practical effects:

  (a) It relieves the contractor of his or her obligations under the contract, except those of making good defects during the Defects Liability Period and responsibility for latent defects.
  (b) The Trust takes possession of the contract works or equipment for operation.
  (c) The Trust becomes responsible for maintaining and insuring the facility.

- If a part of the works, or a separately supplied item of equipment, is taken over before the whole of the works, the same effects apply to that part and the Trust becomes responsible for its safekeeping.
- On practical completion, it is usual for there to be a payment due to the contractor, to discharge the contractual obligations to release a part of the retention monies which have been withheld during the course of the work. This is included in an interim valuation by the quantity surveyor for certification by the contract administrator.

Stage: 6 Post Completion

Claims and Final Accounts

6.1.1 Appendix 3 gives guidance on handling claims and completing final accounts at this stage.

Defects

6.2.1 The Defects Liability Period normally extends for one year after practical completion. During this period:

- The contractor must rectify defects identified on the snags list at practical completion, as well as defects identified subsequently during the Defects Liability Period in the course of operation. This applies to both construction and equipment contracts.

- The project director, project manager, contract administrator and design team are responsible for ensuring that the defects are rectified by the constructor/supplier, and that:
  (a) defects identified by the operating staff are notified to the contractor through the contract administrator;
  (b) defects are rectified satisfactorily and without undue delay; and
  (c) defects are rectified with a minimum of disruption to the Trust's operations.

Final Certificates

6.3.1 Procedures and conditions concerning the issue of the final certificates are as follows:

- Final certificates are issued by the contract administrator after the end of the Defects Liability Period and when all notified defects have been corrected, and when final accounts claims have been settled.

- The certificate effectively ends the contractor's contractual liabilities, except in the case of fraud, and except for any outstanding disputes and latent defects.

- When the last Final Certificate has been issued (in the case where there are several phases or sections have been handed over to the trust), the project is at an end, except for post-project evaluation and completion of the last NHS Executive Project Report Form.

- The Final Certificate entitles contractors to the return of any retention monies.

Stage Completion

6.4.1 Stage completion is undertaken as follows:

- A final NHS Executive Report Form must be submitted after all final accounts have been agreed Final Certificates issued and internal audit clearance. This records the final outturn cost and achieved programme for the project.

- After completion, all consultants should hand over their documents on the project to the project director for retention by the Trust. The number of those documents handed over will vary depending on the project, but should include those:

  (a) which may be required for audit or to respond to Ministerial or Parliamentary requests for information, including those relating to procurement; and
  (b) which relate to tests of quality or for compliance with performance specifications.

- Handover of documents may be deferred until after completion of the post-project evaluation.

6.4.2 The entire scope of the Full Business Case should have been implemented, which will identify:

- the total cost and time for completion of the overall scheme; and
- all quality requirements and functional content.

Appendices

Appendix 1: Project Certificates and Full Business Case Forms

Project Director Appointment Confirmation Certificate

NHS TRUST .....

PROJECT ..... DATE .....

PART A

1. The Outline Business Case for the Project was approved by the Trust Board/NHSE on..... (date) and funds for the capital cost of £..... have been allocated to it.

2. .....(name) has been appointed as project director for the Project effective from ..... (date), has been given a list of his/her duties and responsibilities and delegated authority to manage it, and has taken possession of all relevant documentation.

Signed on behalf of the Trust

.....
Chief Executive Officer

PART B

1. I understand the requirements of the Project as set out in the approved Full Business Case and the duties and responsibilities of the Project Director.

2. I accept the appointment of Project Director.

Signed

.....
Project Director

Brief Acceptance Certificate

NHS TRUST .....

PROJECT ..... DATE .....

PART A

1. The User Panel for the Project has been established with representatives of all the principal departments which will use, operate, and maintain the completed facility, each of whom is authorised to agree on the requirements for their respective departments.

2. The User Panel is satisfied that it understands the Brief and that it contains all the essential requirements of the User Panel.

3. The User Panel understands that it may suggest future changes to the Brief, but that these will not be implemented if approved by the project director through the change control procedure, and that its future role will otherwise be limited to satisfying itself that design, supply, and construction is in accordance with the Brief.

Signed on behalf of the User Panel

.....
Chairman of the User Panel

PART B

1. The project manager and the Design Team are satisfied that the Brief provides all essential requirements to enable the detailed design to be carried out, that it does not contain any mutually contradictory requirements, and that it does not breach any of the constraints (including the budget and the programme) included in the Full Business Case.

Signed

.....
Project Manager

.....
Lead Design Consultant

Certificate of Readiness to Proceed to Detailed Design

NHS TRUST .....

PROJECT ..... DATE .....

PART A

1. The Brief has been completed and a Brief Acceptance Certificate has been signed by the User Panel, the Project Manager, and the Lead Design Consultant.

2. The contract procurement strategy has been reviewed and it has been decided to adopt a ..... strategy.

3. The Project internal organisation is in place and all necessary external consultants have been appointed. Their duties and delegated authorities are appropriate for the contract procurement strategy to be used.

4. The cost estimate and programme have been reviewed, and a risk analysis undertaken and appropriate contingency allowance made. The latest estimated cost, the programme, and the Brief are within the constraints provided in the Full Business Case submission or subsequent re-approval. The Project does not require re-approval.

Signed

.....
Project Director

Approved

.....
Chief Executive Officer

Certificate of Readiness to Proceed to Tender

NHS TRUST .....

PROJECT ..... DATE .....

CONTRACT .....

PART A

1. The design has been completed to the degree appropriate to the contract procurement strategy to be used.

2. The design complies with Building Regulations and Codes of Practice, including Health Service Fire Standards, mandatory standards published by NHS Estates, EC or British Standards including the requirements of environmental authorities where appropriate.

3. The design fulfils the requirements of the Brief.

4. The Pre-Tender Estimate is within the Approved Budget.

Signed

.....
Lead Designer

Checked

.....
Lead Design Consultant

Approved

.....
Project Manager

FULL BUSINESS CASE FOR PREFERRED OPTION **COST FORM FB1**

TRUST/PROVIDER UNIT*..... ORGANISATIONAL CODE: .....

SCHEME:..... ROME CODE: .....

PHASE:.....

PROJECT DIRECTOR: .....

CAPITAL COSTS SUMMARY

		Cost Exc.VAT £	VAT £	Cost Incl.VAT £
1.	Departmental Costs (from Form FB2)			
2.	On-Costs (a) (from Form FB3) (% of Departmental Cost)			
3.	Works Cost Total (1+2) at.....FP/VOP*MIPS (Tender Price index level 1975 = 100 base)			
4.	Provisional location adjustment (if applicable) (% of £) (b)			
5.	Sub Total (3+4):			
6.	Fees (c) (% of sub-total 5)		(d) XXXXXXXXXX	
7.	Non-Works Costs (from Form FB4) (e) LAND OTHER			
8.	Equipment Cost (from Form FB2) (% of Departmental Cost)			
9.	Contingencies			
10.	TOTAL (for approval purposes)			
11.	Inflation Adjustments (f)			
12.	FORECAST OUTTURN BUSINESS CASE TOTAL			

Cash Flow:-	SOURCE			£
Year	EFL	OTHER GOVERNMENT	PRIVATE	
			Total Cost (as 10 above)	

This form completed by: .....

Telephone No: .....

Address: .....

Date: .....

Authorised by: .....
PROJECT DIRECTOR

PROGRAMME **COST FORM FB1 (CONT)**

STAGE:	**DATE ENTERED IN FULL BUSINESS CASE:**
FULL BUSINESS CASE APPROVAL:	
FINAL CERTIFICATE OF READINESS TO PROCEED TO TENDER ISSUED:	
SECOND STAGE APPROVAL:	
FIRST CONTRACT START ON SITE:	
DATE OF LAST CONTRACT "PRACTICAL COMPLETION" ISSUED:	
SCHEME COMPLETION DATE:	

Notes:

* Delete as appropriate

(a) On-costs should be supported by a breakdown as cost form FB3 together with a brief description of their scope.

(b) Adjustment of national average D.C.A. price levels and on-costs for local market conditions.

(c) Fees include all resource costs associated with the scheme e.g. project sponsorship, clerk of works etc.

(d) Not applicable to professional fees – VAT reclaimable EL(90) P64 refers.

(e) Non-works costs should be supported by a breakdown and include such items as contributions to statutory and local authorities; building regulations and planning fees; land costs and associated legal fees. Form FB2 to be attached to this summary.

(f) Estimate of tender price inflation up to proposed tender date (plus contract fluctuations for VOP contracts only) will be entered by NHS Executive.

FULL BUSINESS CASE FOR PREFERRED OPTION **COST FORM FB2**

TRUST/PROVIDER UNIT*.....

SCHEME:.....

PHASE:.....

PROJECT DIRECTOR: .....

CAPITAL COSTS: DEPARTMENTAL COSTS AND EQUIPMENT COSTS

Functional Content	Function Units/Space Requirements (1)	N/A/C (2)	Cost Allowance Version (3)	Equipment Cost Version (3) .....
			£	£
				£
Less abatement for transferred equipment if applicable (.....%) (4)				
Departmental Costs and Equipment Costs to Summary (Form FB1)			£	£

See notes overleaf.

This form completed by: .....

Telephone No: .....

Date: .....

Notes:

Cost allowances should be based on Departmental Cost Allowances where appropriate and include allowances for essential complimentary accommodation and optional accommodation and services where details not available.
Identify separately any proposed adjustment (over or under cost allowances) justifiable in value for money terms (details to be provided).

- * Delete as appropriate
1. State area and rate if departmental cost allowance not available
2. Insert:
   N for new build,
   A for adaptations for alternative use or
   C for upgrading existing building retaining current use
3. Insert relevant version number of CONCISE 4 database listing of Departmental Cost Allowances and Equipment Cost Allowances
4. Provide details where appropriate

FULL BUSINESS CASE FOR PREFERRED OPTION **COST FORM FB3**

TRUST/PROVIDER UNIT*.....

SCHEME:.....

PHASE:.....

CAPITAL COSTS: ON-COSTS

	Estimated Cost (exc. VAT)	Percentage of Departmental Cost
1. Communications £.		%
a. Space		
b. Lifts _____	£	
2. "External" Building Works (1)		
a. Drainage		
b. Roads, paths, parking		
c. Site layout, walls, fencing, gates		
d. Builders work for engineering services outside buildings _____		
3. "External" Engineering Works (1)		
a. Steam, condensate, heating, hot water and gas supply mains		
b. Cold water mains and storage		
c. Electricity mains, sub-stations, stand-by generating plant		
d. Calorifiers and associated plant		
e. Miscellaneous services _____	£	
4. Auxiliary Buildings _____	£	
5. Other on-costs and abnormals (2)		
a. Building		
b. Engineering _____	£.	
Total On-Costs to Summary FB1	£	

Notes: Must be based on scheme specific assessments/measurements; attach details to define scope of works as appropriate. Identify separately any proposed additional capital expenditure justifiable in value for money terms (details to be provided).

* Delete as appropriate

(1) "External" to Departments

(2) Identify any enabling or preliminary works to prepare the site in advance e.g. demolitions; service diversions; decanting costs; site investigation and other exploratory works.

This form completed by: .....

Telephone No: .....

Date: .....

FULL BUSINESS CASE FOR PREFERRED OPTION **COST FORM FB4**

TRUST/PROVIDER UNIT*.....

SCHEME:.....

PHASE:.....

CAPITAL COSTS: FEES AND NON-WORKS COSTS

	£.	Percentage of Works Cost %
1. Fees (including "in-house" resource costs) a. Architects b. Structural Engineers c. Mechanical Engineers d. Electrical Engineers e. Quantity Surveyors f. Project Management g. Project Sponsorship h. Legal fees i. Site Supervision j. Others (specify)		
Total Fees to Summary (FB1)	£	

	£.
2. Non-Works Costs a. Land purchase costs and associated legal fees b. Statutory and Local Authority charges c. Building Regulations and Planning Fees d. Other (specify) e.g. decanting costs	
Non-Works Costs to Summary (FB1)	£

Notes:

* Delete as appropriate

This form completed by: .....

Telephone No: .....

Date: .....

Appendix 2: Estimating, Budgets and Risk Assessment

Introduction

A.2.1.1 The following guidance on costing building schemes should be read in conjunction with the general principles on identifying and quantifying costs set out in the *Business Case Guide*. It aims to expand on the Business Case guidance, with particular consideration of building projects and how the cost estimates are developed as they progress.

Estimate Classification

A.2.2.1 Estimates are usually classified to give an indication of their reliability and accuracy. This depends on the extent of information available, assumptions made about unknowns and the skill and experience of the estimator. Estimates may be classified on the basis of the probability of a cost being achieved within a defined band. Thus a 90/10 estimate is said to be one which has a 90 per cent probability of being achieved within 10 per cent.

A.2.2.2 As a project progresses through its development and design stages, the assumptions on which its cost estimate is based become more reliable and the degree of uncertainty is reduced. This means that the estimate should become progressively more accurate. However, the procurement route chosen determines the level of information available at each stage and hence the likely accuracy of the estimate at a given stage. A risk analysis will assist in making judgements as to the accuracy of a given estimate.

A.2.2.3. The table below gives a general guide to the accuracy that ought to be achieved at each stage of a typical health care construction project.

Stage	Traditional	Design and Build	Management
Concept	80/40	80/40	80/40
Outline Business Case	85/15	85/15	80/20
Full Business Case	90/10	90/10	85/15
Design Complete	95/5	95/5	90/10*

*Assumes major works packages (foundations, external envelope, M & E services design)

A.2.2.4 The table is illustrative only; it shows that design is a significant uncertainty, and as design is completed so costs become more certain. In the traditional procurement approach, design is usually further advanced at Full Business Case than other strategies and, as a result, a greater degree of certainty is achieved at that time. Management forms of contract, which are usually only used for very large schemes, have greater uncertainty later in the project as design overlaps construction. Similarly, for Design and Build strategies a high degree of cost certainty occurs only after contract award, but at that stage cost is more certain than other contract forms as the contract is usually a lump sum, with the contractor bearing the brunt of the risk.

A.2.2.5 There is a greater risk of unknowns in refurbishment work and where foundations and ground conditions are involved. Full and comprehensive surveys can assist in minimising such risks.

Estimating

A.2.3.1 All estimates are based on bringing together the component parts of the project, with the cost of each component being established from past experience. The way the estimate is broken down into components depends on the objective of the estimate and its target reliability and accuracy. Typically, estimates at an early stage are based on reference costs or cost allowances (see DCAs below); then as design is developed, the estimate is related to specific design solutions broken down into an elemental cost plan. Finally, estimates during construction are based on contracts awarded and the drawings for unprocured work. As the project progresses, the project director will need to compare latest estimates with previous ones and with the commitment and expenditure already made.

Estimate Components

A.2.4.1 The components that make up the estimates normally include:

- departmental costs: based on departmental cost allowances published by NHS Estates for functional units with their recommended space and cost allowances. Details to be compiled on form FB2;
- on-costs: provides allowances for communications and facilities between departments, external building works, external engineering works, auxiliary

buildings and other building or engineering costs. Details to be compiled on form FB3.
- works costs: the total of departmental and on-costs or, where departmental costs are not used, all contracts for any physical work, including preparatory or enabling works, foundations, drainage, roads and infrastructure, etc. This may include an estimate for technical commissioning;
- location: local adjustments may be made to the national departmental cost allowances if appropriate;
- fees: for professional and specialised services. Details to be compiled on form FB4. Sometimes referred to as resource costs;
- non-works costs: for land purchase, statutory provision and building regulations or planning fees. Details to be compiled on form FB4;
- equipment: see Appendix 5. Details to be compiled on form FB2; and
- contingencies: see end of this Appendix.

Most of these costs will be subject to VAT (see form FB1).

A.2.4.2 These may not all be required in every case and some projects will require other categories.

Departmental Cost Allowances

A.2.5.1 In the NHS, past experience of construction costs has been collected and analysed to form a series of reference costs called departmental costs allowances (DCAs). For each functional element in a hospital scheme, a typical design content has been assumed and a cost allowance for that function established. This allowance was, in the past, a fixed costing base against which all projects were judged, and served to control both the design content of the scheme and the approved cost level. With the transfer of responsibility for financial management to the Trusts and the establishment of financial justification procedures, it is no longer appropriate to apply rigid central control of functional content. This is now a matter for justification within the Business Case. However, estimates and the control of cost and value for money remain a central priority. For this reason DCAs should at least be used as a reference cost to assist in the establishment of a control budget.

A.2.5.2 Therefore, DCAs should be used as reference costs at an early planning stage to establish a cost target that ensures developments are designed in an economical manner without impairing their functional requirements. They provide a cost related solely to the work carried out within the confines of a specific department; to this cost must be added allowances for related works outside the department, such as energy and services sources, corridors, lifts, other non-usable space requirements and external works.

A.2.5.3 A full schedule of all current DCAs is available from NHS Estates.

Equipment Cost Allowances (ECAGs)

A.2.6.1 ECAGs are the equipment equivalent of DCAs, i.e. they represent the cost of fully equipping each department with all necessary new Group 2 and 3 equipment. As for DCAs, a full schedule is available from NHS Estates.

A.2.6.2 ECAGs form a valuable role in supporting the development of an appropriate equipment budget.

Statistical Indicators

A.2.7.1 In preparing cost estimates, it is advisable to refer to suitable indices in prices and cost movements throughout the building industry and selected sectors. This is particularly important when costings have to be revised more than a year after the last calculation was carried out.

A.2.7.2 NHS Estates produce a Quarterly Briefing document which provides regular updates on information for investment economics and construction project information. The briefing includes movement in the Median Index of Public Sector Building Tender Prices (MIPS), Equipment Price Index and general building costs indices.

Content of the Project Base Estimate

A.2.8.1 The project base estimate is the starting point for building up estimates for risk and should be the latest estimate of cost or time (including the cost of risk allocated to other parties), but with no contingency for risk. The components of a project base cost estimate are set out in para A.2.3.1.

Risk Analysis and Contingency Allowance

A.2.9.1 A risk analysis is a formal review of the residual risk exposure at important stages of a project. Its objectives are to:

- set the contingency sum
- identify all potential risks.
- identify important risks at each stage of a project.
- identify any unusual risks; and
- determine the maximum possible action as well as the most likely project out-turn.

A.2.9.2 Risk identification usually consists of:

- understanding the content of the project base estimate;
- reviewing the likely sources of potential risk; and
- identifying the potential risks.

Identifying Potential Risks

A.2.10.1 Methods for identifying potential risks range from using standard checklists to brainstorming sessions. The generally established methods include:

- structured meetings with key staff – might be

facilitated by an expert risk manager to encourage all participants to contribute fully to the exercise;
- risk audit interviews – may be an alternative to structured meetings when there is a large number of key staff. An expert manager would interview staff for the purpose of identifying, collating and analysing risk data; and
- brainstorming sessions – these are not a free-for-all but a structured device led by someone with a good knowledge of this technique.

A.2.10.2 The outcome of the identification process should be a schedule of potential risks that could adversely affect the project out-turn.

Risk Assessment

A.2.11.1 Risk assessment may be divided into qualitative and quantitive assessments. The former describe possible risks and the latter attempts to measure them.

A.2.11.2 Qualitative risk assessments should focus on the causes and effects of potential risks. Techniques for doing this include structural meetings, risk audit interviews and brainstorming sessions. A suggested pro-forma for this purpose is included at the end of this appendix.

A.2.11.3 Quantitive risk assessment attempts to clarify the probability of a risk happening. The risk may be quantified in terms of:

- increased cost;
- increased time; and
- reduced quality and performance.

A.2.12.1 Among the various methods and techniques for measuring probability are:
- sensitivity analysis – investigating the effect on the project out-turn of a change in the assumptions of one of the important risks. This technique is mentioned in the *Business Case Guide* where it is used for discounted cash-flow calculations. This approach is usually appropriate during the option appraisal stage;
- simple risk assessment – considering each important risk separately and investigating the possible combined effect by inspection. Usually an estimate is made of the most likely consequence of each risk, and these are added together to give an approximation of the level of risk in the form of the maximum likely and most likely values. This will usually give a good indication of how the important risks could affect the project and is most often used for small or medium sized projects; and
- probability analysis – calculating the cost or time consequences of each important risk for a limited number of assumptions. These are subsequently expressed as a range of values of probability with their associated values of consequence. Usually each important risk can only be quantified realistically by calculating possible values of cost or time for three reasonably foreseeable cases:

  (a) the worst;

  (b) the most likely; and

  (c) the best.

A.2.11.5 The risk analysis process, covering identification, assessment and quantification, is illustrated as a flow chart at the end of this appendix. More detailed advice on the issues involved and the way in which a risk analysis is carried out is contained in CUP Guidance Note 41 – 'Managing Risk and Contingency for Works Projects'. A risk analysis flow chart is included at the end of this appendix.

Estimating Contingency and Risk Exposure

A.2.12.1 The contingency sum should be added to the project base estimate to identify the total financial provision required. If the identified risks are not acceptable, then the contingency should not be set until management action has been taken to review the risk exposure and to identify responses that will reduce the exposure to an acceptable level. A revised risk analysis should be carried out to determine the most likely out-turn and contingency.

A.2.12.2 The provision for contingency may provide for:
- the most likely anticipated cost (sometimes referred to as the average risk estimate); or
- the maximum likely risk estimate (sometimes referred to as tolerance).

Setting the Contingency Allowances

A.2.13.1 Contingency allowances should reflect the client's risk exposure. The best way to ensure that contingency allowances provide for the risks to the project is to determine the size of the allowances from the results of a risk assessment.

A.2.13.2 Three separate allowances are recommended for:

- the client's contingency, which provides for the risks of client changes in project definition or inappropriate project organisation and management, and risks arising from changes in external factors, such as availability of funds, statutory requirements and *force majeure*;
- design contingency to allow for use during the design process to provide for the risks of changes due to design development or in estimating data; and
- construction contingency to allow for use during the construction process to provide for the risks of changes due to site conditions or as a result of construction and commissioning. CUP Guidance Note 41 'Management Risk and Contingency for Works Projects' gives detailed checklists under these headings.

PRO FORMA FOR A QUALITATIVE RISK ASSESSMENT

Ref:	Rev:	Date:

Potential risk:

(a brief description of the risk)

Importance of the risk:

Probability:	*high/low
Consequence:	*high/low

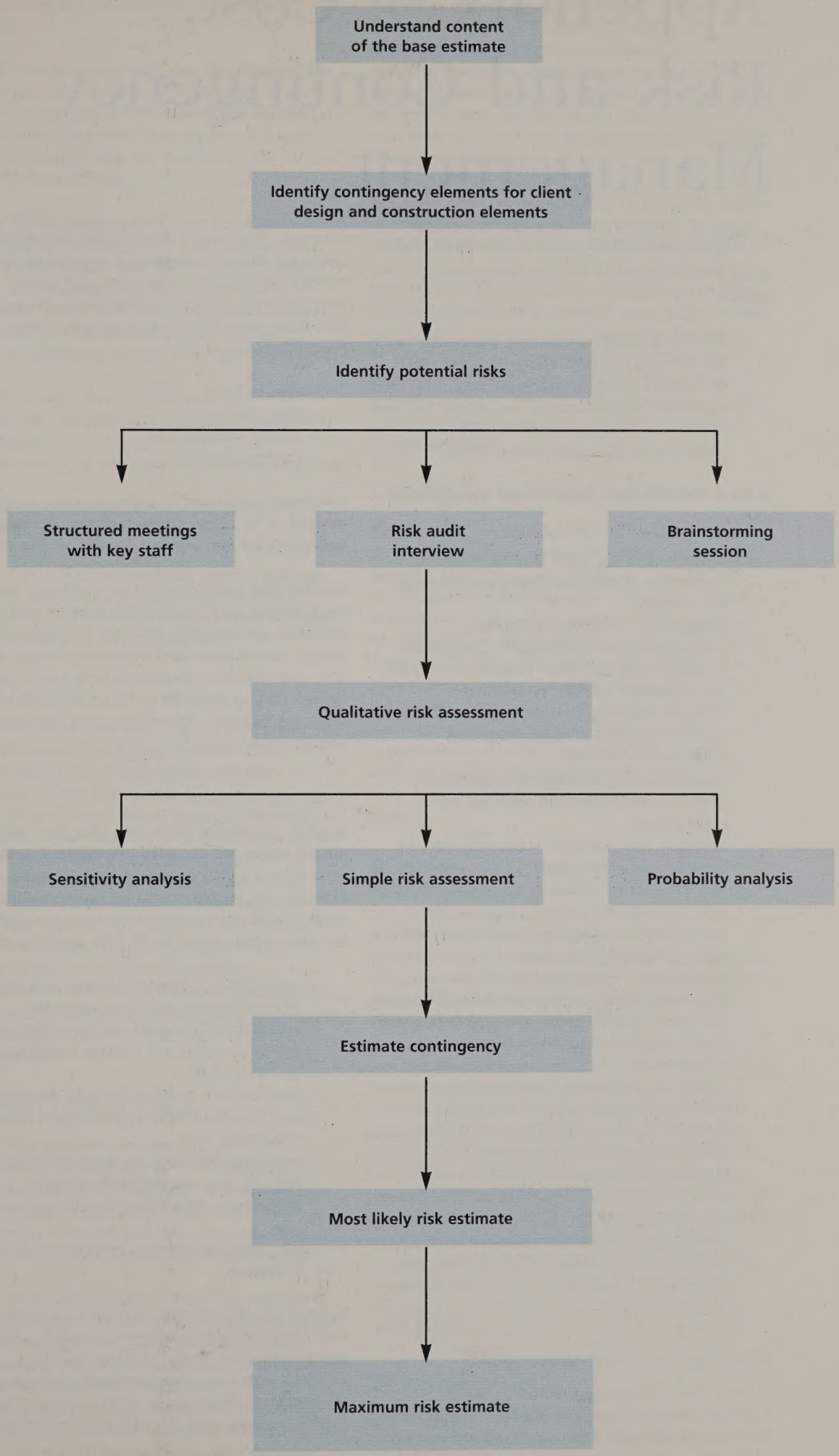
Stages of the project affected by the risk:

Statement of risk:

(the elements of the project that could be affected)
(the factors that could cause it to occur)
(any relationship or dependency on other risks)
(the likelihood of it occurring)
(how it could affect the project)

*Delete where appropriate.

RISK IDENTIFICATION



Appendix 3: Cost, Risk and Contingency Management

Cost Management and Cost Reporting

A.3.1.1 The objectives of cost management include:

- delivering at the lowest cost compatible with the specified quality, and within the cost forecast at the approval stage; and
- ensuring that throughout the project, full and proper accounts are monitored of all transactions, payments and changes.

A.3.1.2 The principal areas of cost management are:

- scope – defining what is to be included within the project and limiting expenditure accordingly;
- programme – defining the project programme from inception to completion. Estimates and cash flow projections should be consistent with the programme;
- design – ensuring designs meet the scope, and what quality is appropriate and conforms to the brief.
- commitments – ensuring that orders are properly authorised and awarded by competition;
- contracts and materials – ensuring that the contracts provide full and proper control and that all costs are properly incurred. Ensuring that materials are properly specified so as to meet the scope and design, and that they can be effectively procured;
- contingency – ensuring all risks are appropriately allocated from contingency and are properly authorised, and monitoring use of contingency funds to forecast overall outturn cost;
- cash flow – planning and controlling both commitments and expenditure within budgets so that unexpected over/under run cost do not result, ensuring that all transactions are properly recorded and authorised and where appropriate, decisions are justified. Regular, consistent and accurate reports are available for different levels of management. A suggested generalised cost report format is included at the end of this appendix.

Contingency Management

A.3.2.1 The contingency should be strictly managed by the project director with support and advice from the project manager and the quantity surveyor. The project director can effectively discharge this responsibility if suitable project control procedures are in place and control all aspects of the project's performance. To support this, there must be effective project control procedures for:

- cost control;
- time control;
- quality control; and
- change control.

Essentially, contingency management consists of a procedure to move costs out of the allowance for contingencies into another for the project work.

A.3.2.2 Risk and contingency should be reviewed on a regular basis, particularly when formal estimates are prepared, but also throughout the design, construction and equipping stages. As more firm commitments are entered into and work is carried out, so the risks in future commitments and work are reduced. The contingency estimate should reflect this.

Change Control

A.3.3.1 Avoidance of change after the briefing and design stages are complete should be a prime objective of a project management strategy. Changes can be minimised by ensuring that the project brief is as comprehensive as possible and the users have signed it off. This might entail:

- early discussions with outside authorities so as to anticipate their requirements;
- undertaking adequate site investigations, or condition surveys if existing buildings are to be renovated;
- ensuring that designs are fully developed and co-ordinated before construction contracts are committed; and
- imposing discipline on users to finalise and sign off their requirements in strict accordance with the project programme.

If changes are unavoidable, they should be dealt with as follows.

A.3.3.2 Changes proposed prior to construction may either be unavoidable or optional. If they are unavoidable, the project director should, if satisfied, authorise a transfer from contingency into the budget to cover them. If they are optional, they should be approved only if it can be demonstrated

that they offer good value for money, or a saving, and that there are sufficient funds available to pay for them.

A.3.3.3 Changes proposed after the construction contract has been let should be avoided if at all possible. If they are not essential, they should be deferred until the project is complete and then reviewed to see if they are necessary and justifiable economically.

A.3.3.4 When changes do occur, the project director will be responsible for controlling them; he/she should ensure that the project manager designs and implements effective control procedures, which include the implementation of any change (except in emergency situations) before the following factors have been identified:

- the reasons for any changes;
- the full cost and time consequences of the changes;
- proposals for avoiding and investigating time overruns; and
- source of funding any cost overrun, e.g. contingency, savings elsewhere.

A.3.3.5 For reporting purposes, project changes should be categorised in accordance with the headings and definitions contained in CUP Guide No.38 'Approval of Works Projects'.

Cost Profiling

A.3.4.1 An initial cost profiling for the project will have been quantified for the Business Case. This will have produced a discounted cash flow calculation, which will include the capital cost for the life of the project. When financial approval has been given to the Trust for its scheme, an external financing limit (EFL) will be set at a level which allows for the anticipated scheme costs. If the actual profile of expenditure on the project is greater than allowed for, the Trust will have to find the extra resources from within its EFL. If it exceeds its EFL, it will incur a penalty – a reduction in its EFL during the next financial year. It is important that project expenditure is properly and timeously monitored and kept within its forecast profile.

Elemental Cost Planning

A.3.5.1 The essential feature of 'cost management', as opposed to 'cost recording', is the reactive nature of design and commitment to the cost status of the project. Elemental cost planning is a tool that aids this interaction and assists in the control and management of costs.

A.3.5.2 In an elemental cost plan the estimate is broken down into a series of elements which can then be compared with later estimates, or with actual costs as the project progresses. For building projects, the most widely used breakdown of elements is that produced by the BCIS (Building Cost Information Service), details of which may be obtained from NHS Executive, or from project quantity surveyors. Typically, each element will be treated as a cost centre, but money may be transferred between elements, provided a reasonable balance between elements is maintained and the overall target budget is not exceeded. The initial cost plan is likely to be based on approximate figures, which provide nevertheless a fair basis for determining the validity of future estimates.

A.3.5.3 Control is achieved by an on-going review of estimates for each cost centre against its target budget. As design develops and is costed, any variance in cost from the cost plan is identified. Decisions are then taken on whether that element can be permitted to increase in cost, which would necessitate a corresponding reduction elsewhere, or whether the element must be redesigned in order to keep within the budget. This provides a flexible degree of cost management control whilst retaining freedom within a control budget for the design specialists.

Continuous and Stage Estimates

A.3.6.1 The quantity surveyor should be asked to carry out a running review of designs as they develop, and to provide advice on costs to both the design team and the project manager. Usually, authority for a degree of design development will be delegated to the project manager by the project director; this should be assessed in relation to each project and possibly, on complex projects, to each cost centre. This continuous costing will be of great benefit in assessing individual decisions and is particularly important on large and complex schemes. It does not, however, obviate the need for a periodic formal assessment of the whole scheme.

Cost Control During Design Development

A.3.7.1 The project director has overall responsibility for a project, including the estimated cost, and will need to be satisfied that appropriate systems to control cost are in place and operating. Clearly, the non-professional project director cannot take detailed design decisions, but he/she can and should require that all such designs which have a significant cost attached are properly reviewed against the budget provision and that they are properly authorised. Usually, the project director will delegate a level of financial authority for design development decisions to the project manager and/or the design team. This level should be assessed in relation to each project and possibly on complex projects to each cost centre. The project director should see that these levels are not exceeded and, with the project manager, set up systems to review actual costs in relation to the estimate against which a decision was made.

Value Engineering

A.3.8.1 This technique is concerned with how value is achieved, rather than what the relative values are as defined in a project brief or objective.

A.3.8.2 Value engineering studies are planned formal reviews of the design philosophy and solutions at one or more stages of design development. They are often carried out by independent agents, who review detailed design solutions against project objectives and establish whether they can be achieved in a more cost-effective manner.

A.3.8.3 The benefits of this approach include:

- clarification of the project brief;
- design rationalisation; and
- minimisation of costs.

Cost Management during Construction

A.3.9.1 During construction, instructions issued to the contractor, whether for change or for clarification of detail, have a much more immediate cost. Under the terms of a building contract, such instructions are issued by the contract administrator, who has the responsibility for administering the contract on behalf of the client. (This may be the project manager or the design team leader.) The project director needs to establish procedures regarding instructions and information (similar to those established for control of design development) which ensure that:

- Instructions are issued within the authority delegated by the project director.
- Instructions are costed prior to issue – or where this is impracticable – as soon afterwards as possible.
- The cost of all instructions is monitored on a continuous basis and no backlog of work is undertaken without formal instruction.
- Specific approval is sought and given where costs of an instruction are forecast to be outside the level of authority delegated to the contract administrator.
- Appropriate authority is sought immediately if costs of an instruction issued under delegated authority are estimated to rise above the delegated limit. Effective cost management is dependent on the management systems and procedures established by the sponsor and manager.

Final Accounts

A.3.10.1 For building contracts:

- The quantity surveyor is responsible for agreeing the final account with the contractor.
- An agreement should be made as soon as possible after practical completion; is made easier, and faster, if it is done as the work is carried out during the contract, so that only a few outstanding issues remain at practical completion.
- The project director, through the project manager, should make sure that the quantity surveyor agrees quantity and value variations as the work progresses and does not leave these until the end.
- The monthly Financial Status Report should indicate the status of the final accounts.

For Group 2 and 3 equipment contracts:

- Responsibility rests on the person nominated as the 'engineer' or the project buyer rather than the quantity surveyor.
- As for building contracts, outstanding issues should be agreed as they occur, instead of leaving them to the end.

Claims

A.3.11.1 Claims can vary from a routine request for additional time to complete a task to a serious allegation of breach of contract. Where a claim is not met in full, or is outside routine procedures, it represents a potential preliminary action to a dispute over money.

A.3.11.2 The project team should adopt procedures that will minimise exposure to the risk of claims.

A.3.11.3 The procedures should provide formal reports on a claim, which:

- give details of the claim and why the parties are in dispute;
- include an assessment of the extent of the liability;
- include negotiating proposals; and
- give an assessment of the likely outcome in financial terms.

A.3.11.4 Detailed advice on handling claims is set out in *CONCODE*; this should be referred to in the event of a dispute. In particular it should be noted that *ex-gratia* payments should be made only in exceptional circumstances, in accordance with guidance on financial procedures issued by the NHS Executive.

A.3.11.5 Wherever possible, claims, and matters which could give rise to claims, should have been dealt with during the course of the work, but there may be outstanding contractual claims when the Certificate of Practical Completion is issued. These should be dealt with as follows:

- The certificate may not be withheld on account of such claims.
- The contract administrator must settle these claims as soon as possible, and before the final account can be agreed.
- The project director should seek advice from the NHS Executive if there are significant

outstanding claims, or if there is a dispute leading to arbitration or litigation. Disputes can carry on for some time after contracts are otherwise completed.

TYPICAL FORMAT OF COST REPORT

Project		Cost Report No.				Date:	
Code/ Description	Approved Budget	Expenditure to Date			% Complete	Estimated Final Cost	Variation + or (-)
		Estimated	Actual	Total			

Appendix 4: The Brief

Introduction

A.4.1.1 The brief is the document which defines the owner's requirements, and which forms the basis of the cost estimates and of all subsequent design and construction. Getting it right is therefore of crucial importance; if it is wrong, the Trust may fail to provide the medical team with what they need or the facility may not function efficiently. The initial brief is prepared for the Full Business Case, and is reviewed, further developed, frozen, and implemented during the design stage.

A.4.1.2 Getting it right first time is very important. Changes when design is under way, or even worse during construction, are one of the largest causes of time and cost overruns, both on health care projects and more generally on other public and private sector projects.

A.4.1.3 The preparation of the brief is the time when the User Panel representing the end users have both the opportunity and the obligation to specify their requirements for the completed facility.

Content of the Initial Brief

A.4.2.1 For detailed information on what should be included in the initial brief, project directors should refer to Health Building Note 2 – Briefing and Operational Policies. The content of the brief will vary depending on the nature of the project, and will need the input of professional hospital planners and designers. In its final approved form, however, it should include:

- Trust and whole-hospital policies on catering, storage, parking, etc., together with whole hospital engineering policies;
- departmental policies on matters such as workload, hours of operation, revenue assumptions and workflow patterns;
- the financial constraints imposed by the approved budget, including operating costs;
- technical constraints imposed by such things as the Planning Authority and site conditions; and
- schedules of accommodation

Full Brief

A.4.3.1 The full brief is completed in the design stage by the preparation of room data sheets, setting out in detail the equipment, services, environment, etc., required in each room in the schedule of accommodation. It should also set out the performance requirements for the building services and the equipment to be installed as part of the building contract.

Brief Development

A.4.4.1 The development of the brief is an iterative process. It starts with the broadest concept of the Trust's objectives and the scope of the facility required to meet those objectives, and progresses, with increasing levels of detail, until all the essential parameters have been specified. At each stage, the requirements are developed by consultation with the members of the user panel who are encouraged to describe their own requirements so that they can be put down in the form of a simple specification and sketches. As each stage is developed, it is reviewed by the user panel, which is asked to confirm that it accurately reflects their needs and to sign it off. That stage is then frozen, and can be developed in more detail to the next stage. It can be seen that there is an overlap with design. As the brief develops, it begins to become a preliminary sketch plan design and at the end it will be a final sketch plan design. It is preferable for final sketch plans to form part of a Full Business Case.

A.4.4.2 As the brief is developed, the project director should be fully aware of the developing cost estimate and the trade-offs which will have to be made between quality, capital cost, and future running costs, all of which may affect the viability of the project. At the same time, the brief is checked against the agreed policies and principles. If at any time the cost should exceed the approved budget the brief must be reviewed to identify savings and to modify it accordingly. Otherwise NHSE re-approval will have to be sought. This process is set out in the flow diagram at the end of this Appendix.

A.4.4.3 The final brief, once it has been completed and signed off as acceptable, is a document which can be used by the design team – whether in a traditional contract strategy or a fast-track one – as the basis for the project's detailed design and the specification to be used for supply and construction.

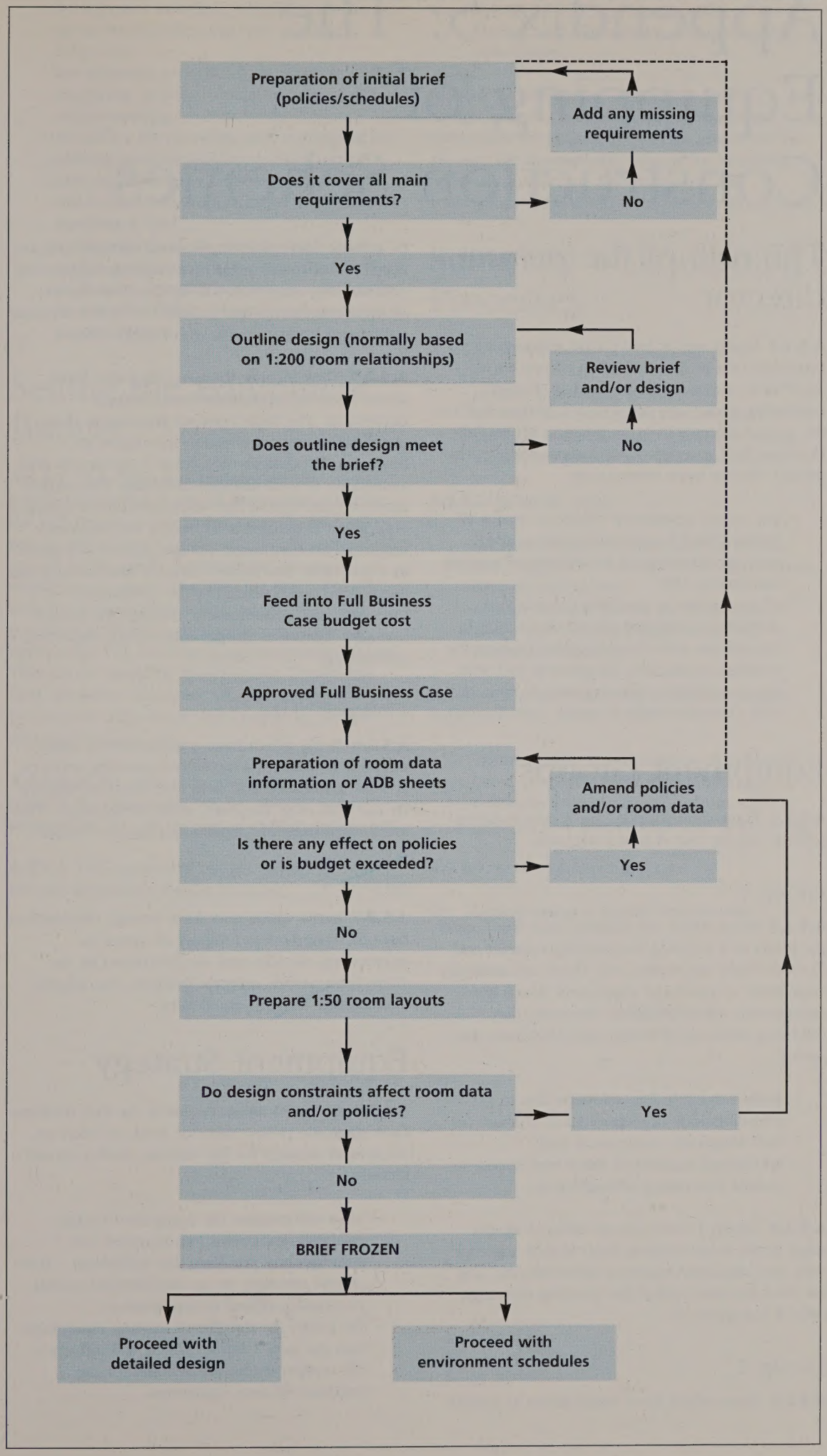
A.4.4.4 This process should be treated as a project of its own, either managed by the project director, or, if he/she does not have enough experience, by consultants appointed to develop the brief. The brief is finally reviewed by the consultants, who will be responsible for project implementation and any final development to help it become the approved design brief and to ensure that tender drawings and specifications are prepared.

A.4.4.5 It is likely that the end users will not be able to define easily their requirements or to read drawings and specifications. Therefore, one of the jobs of the project director and the team which develops the brief is to explain the drawings, layouts, and specifications to the end users in terms which a lay person can understand, so as to ensure that they fully appreciate what they are going to get before their approval is given. The importance and implications of each decision, and its timing, must be clear; the cost impact of some decisions may be high, but the cost of changing them later is likely to be far higher.

A.4.4.6 At the conclusion of the process, when the brief is signed off, the end users must understand that it is frozen. They will not have another opportunity to change it, but will be able to see how their requirements are then developed into the final design.

A.4.4.7 Some projects are developed in stages, with different contracts for each stage, or, under a management form of contract, with sub-contracts placed sequentially. In the latter case, the briefs for each stage may also be completed and signed off sequentially. However, care must be taken to ensure that completion of the later briefs does not result in changes to those stages which have already been frozen.

FIGURE 1: FLOW DIAGRAM FOR DEVELOPMENT OF BRIEF



Appendix 5: The Equipping of Construction Schemes

The role of the project director

A.5.1.1 Equipment is vital to the successful operation of a project and often comprises a significant proportion of the budget. Expert equipping advice and services will be required by the project director from preparation of the Full Business Case to operational commissioning. The project director must ensure that:

- the correct equipment budget is set for all Group 2 and 3 equipment, taking into account the potential for transfer of existing equipment; and
- all equipment is purchased/transferred, delivered/stored and placed in position in accordance with the equipment budget, the building contractor's programme and with the operational commissioning programme (see *Commissioning a Health Care Facility*).

Equipment Groups

A.5.2.1 Equipment supplied for a new building scheme can be one of four categories:

Group 1

A.5.2.2 Items which are supplied and fixed under the terms of a building/engineering contract and funded within the works cost. These are generally large items of plant and equipment which are permanently wired/installed. However, the following items are normally excluded from this group:

- items subject to late selection due to considerations of technological change, eg radiodiagnostic equipment; and
- specialised equipment items best suited to central purchasing arrangements.

A.5.2.3 Group 1 items are specified at design stage in the room (activity data) sheets, together with any associated electrical terminals, etc. and are then included within the working drawings, bills of quantities etc.

Group 2

A.5.2.4 Items which have implications in respect of space/construction/engineering services and are installed under the terms of a building/engineering contract, but are purchased by the Trust under direct arrangements and funded out of the separate equipment budget, along with Group 3 items.

A.5.2.5 They include the two categories listed above as being exclusions from Group 1 equipment. The main contract documents must clearly state any qualification in relation to timescales for delivery of Group 2 equipment and availability of final installation details. The project director must ensure that responsibility for Group 2 equipment is defined at all stages and insurance requirements confirmed. Further guidance is given in *CONCODE*. The project director must ensure that these items are procured to the contractor's timescale and, subsequently, through the project manager, ensure its proper installation, inspection and testing.

Group 3

A.5.2.6 Items which have implications in respect of space and/or construction/engineering services and are purchased and delivered/installed directly by the Trust, e.g. furniture, small refrigerators. They are funded from the separate equipment budget.

Group 4

A.5.2.7 Items which may have storage implications but otherwise have no impact on space or engineering services and are purchased by the client from normal revenue budgets, e.g. surgical instruments, desktop equipment.

Equipment Strategy

A.5.3.1 At the commencement of the Full Business Case stage the project director must establish an equipment strategy for the scheme, which should identify:

- who will prepare the equipment budget, establish equipment requirements and subsequently purchase the equipment – this should normally be an experienced capital purchasing officer or organisation;
- the policy for transfer of existing equipment into the new scheme, which will influence the budget within the scheme for the purchase of new equipment;

- the equipment procurement procedures to be followed to ensure compliance with government policy and with absolute propriety;
- the reporting procedures on progress of the equipping process through to operational commissioning;
- the policy for procuring new equipment for existing services pending transfer into any new facilities, i.e. to ensure compatibility – this is especially important for 'high tech' equipment; and
- a risk analysis of the factors which might lead to an increase in the equipment budget, so that an appropriate contingency sum can be included within the total approved sum for the scheme.

Setting the Equipment Budget

A.5.4.1 The equipment budget must be established so that it can be incorporated within the Full Business Case submission. It will form part of the scheme's approved budget cost, which cannot subsequently be exceeded. Because detailed equipment schedules are not prepared until the Design Stage an experienced capital purchasing officer is required to advise on the appropriate Full Business Case equipment budget. This advice would be based on the Equipment Cost Allowance Guidance (ECAG), supplemented by previous experience and knowledge of this particular project.

A.5.4.2 ECAG allowances should be used as the basis of the equipment budget, abated, where appropriate, for the transfer of existing equipment.

A.5.4.3 The equipment budget should also include allowances for the costs of:

- equipping staff;
- storage of new equipment; and
- transfer (e.g. dismantling, transport and installation).

A.5.4.4 An allowance to cover the risk of equipment costs increasing during the project (other than by inflationary factors, which will be allowed for automatically) should be included, if necessary, within the Full Business Case contingency sum, based on a proper risk analysis.

Summary of Equipping Processes

A.5.5.1 At Full Business Case Stage:

- prepare equipment strategy;
- establish the equipment budget; and
- undertake risk analysis and, if necessary, identify an appropriate contingency sum.

A.5.5.2 At design stage:

- prepare equipment schedules for Group 2 and 3 equipment based on the agreed room data sheets/layouts;
- identify items available for transfer; and
- check costs against budget set at Full Business Case stage.

A.5.5.3 At construction and equipment supply stage:

- ensure purchase and delivery of Group 2 items in accordance with the building contractor's requirements and timescale, together with proper inspection and testing.

A.5.5.4 At Commissioning Stage:

See *Commissioning a Health Care Facility.*

Appendix 6: Project Execution Plan (PEP)

Introduction

A.6.1.1 A mandatory requirement is the preparation of a Project Execution Plan (PEP) for all projects requiring NHS Executive approval. Trusts are recommended to prepare one for lower-value projects as well.

A.6.1.2 The PEP is the core document for the management of a project. It is a statement of policies and procedures defined by the project director, although usually developed by the project manager for the project director's approval. It sets out in a structured format the project scope, objectives, and relative priorities. The PEP:

- includes plans, procedures and control processes for project implementation and for monitoring and reporting progress.
- defines the roles and responsibilities of all project participants, and is a means of ensuring that everyone understands, accepts and carries out their responsibilities; and
- sets out the mechanisms for audit, review and feedback, by defining the reporting and meeting requirements, and, where appropriate, the criteria for independent external review.

A.6.1.3 The PEP will change as a project progresses through its design and construction stages. It should be a dynamic document regularly updated and referred to as a communication tool, as well as a control reference.

PEP: Format and Content

A.6.2.1 Much of a PEP will be standardised, but the standard will need to be modified to meet the particular circumstances of each project. A typical PEP might cover the items listed below, although some matters may appear under a number of headings with a cross reference system employed to avoid duplication:

- project definition and brief;
- roles, responsibilities and authorities;
- project cost plan and cost management procedures;
- risk and sensitivity analysis
- programme management;
- contracting and procurement
- administrative systems and procedures
- safety and environmental issues, such as the construction design and management regulations;
- quality assurance;
- commissioning; and
- post project evaluation.

A.6.2.2 The following sections describe the contents of some of these subjects in more detail.

Project Definition and Brief

A.6.3.1 The full project definition should be defined in the brief. The PEP should refer to the brief, not duplicate it, but should cover:

- the project particulars, ie the Trust name, the project name and reference, and details of the Full Business Case approval;
- the health care objectives;
- operational constraints;
- the construction objectives, ie the overall budget and programme limits;
- priorities in terms of quality, time, and cost;
- location, general arrangement, physical environment, and design constraints;
- design philosophy; and
- contract procurement strategy.

A.6.3.2 The brief will have been prepared for the Full Business Case, but may not be complete and will not have been finally frozen and signed off. The PEP will cover arrangements for final review and approval by the user panel and the procedures for keeping the user panel informed of the implementation of the brief during design and construction. It will re-state any priority requirements contained in the brief. The control procedure for any changes to the brief after it has been signed off should be set out clearly.

Roles, Responsibilities and Authority

A.6.4.1 The PEP should outline the project organisation in a formal way, describing:

- the names, addresses, and telephone and fax numbers of all organisations involved in the project;
- their roles and relationships with each other; and
- their responsibilities and the authority delegated to them as well as the names and responsibilties of key personnel within each organisation.

This should provide a comprehensive directory of the project which defines relationships and lines of communication.

A.6.4.2 The ultimate authority for all external members of the project team is the project director,

who is in charge of establishing the responsibilities of Project Manager and others in the project team. The PEP should specify financial delegation limits and those types of decision that the project director wishes to remain responsible for. An internal section of the PEP will, similarly, define the authority of the project director and how he/she relates to the user panel and the Chief Executive Officer and, where established, the Project Board.

A.6.4.3 At stage 1, the roles and responsibilities for planning, design, procurement, construction, equipment, and commissioning should be defined for:

- the project director;
- the project manager;
- the lead designer and the other members of the design team; and
- the quantity surveyor.

A.6.4.4 As the project progresses the roles and responsibilities of contractor(s), sub-contractors, the Contract Administrator, the Clerk of Works, commissioning staff, etc. should be added to the PEP.

Project Cost Plan and Cost Management Procedures

A.6.5.1 The PEP should define cost-management recording and reporting procedures. Typically, both the budget and recorded costs and commitments will be subdivided into a series of 'cost centres' for administrative, estimating, and contractual convenience – see Appendix 7, which shows this and defines the terms used. The PEP will establish the cost centres and will define the build-up of the current control budget; this is the project cost base line, and performance will be measured against achievement of this budget. It is known as the cost plan.

A.6.5.2 Responsibility for cost management issues on a project will usually be delegated to the project manager and the quantity surveyor. They will propose appropriate control and reporting practices and procedures which should meet the requirements set out in Appendix 7; they must satisfy the project director that these are adequate and appropriate for the project.

A.6.5.3 Typical cost management procedures include:

- the cost plan;
- change control;
- risk management;
- cost reporting;
- contingency management; and
- expenditure profile and annuality control.

More detailed advice on these procedures is set out in Appendix 3.

A.6.5.4 The current control budget build-up will usually be relayed to all members of the design team, except for contingency, which should be strictly managed by the project director with the support and advice of the project manager and the quantity surveyor.

A.6.5.5 The PEP should also set out the anticipated expenditure profile.

Programme Management

A.6.6.1 The start and completion dates in the project programme will have been defined in the Full Business Case. During stage 1 the project manager must develop this into a more detailed programme, which shows:

- the dates by which milestone events must be completed;
- and the interdependancies of events in network format, the critical path, and the available float.

This task requires considerable experience and effort. The programme developed must be both comprehensive and realistic, as it will form the basis of all future progress monitoring.

A.6.6.2 Network programmes are difficult to understand, so they are converted into bar charts for ease of reference. There is a hierarchy of programmes, each in more detail than the one above it. The top level programme is the list of milestone events which is used for progress reporting.

A.6.6.3 The PEP will not contain the detailed network, but should refer to it and include:

- milestone events and a definition of their meanings;
- the amount of detail required;
- the frequency of review; and
- how progress is monitored against the programme.

Administrative Systems and Procedures

A.6.7.1 The PEP will establish the various administrative procedures necessary for the effective and controlled implementation of the project. Typical procedures will include, amongst others, those recommended by the project manager. These may include:

- document numbering and filing systems;
- drawing numbering systems;
- computer software standards, including Computer Aided Design (CAD);
- project reporting; and
- meetings, including objectives, frequency, attendance, secretarial, etc.

A.6.7.2 The project manager should specify administrative procedures for the project director's approval. The systems which the project manager already has available should be used whenever they meet the project director's requirements; this will be more efficient and cost effective than designing new systems.

Technical Standards

A.6.8.1 There may be some specific technical standards, not covered by the brief but which should be included in the PEP. Examples are:

- the format of as-built or other permanent record drawings,
- plant and equipment numbering systems compatible with the Trusts's asset register; and
- requirements relating to the operating and maintenance instructions for plant and equipment.

A.6.8.2 These are generally related to the future operation and maintenance of the facility. The project director must identify such requirements by consultation with the user panel and ensure that they are included in the PEP.

Appendix 7: Monitoring and Monthly Progress Reports

Introduction and Objectives

A.7.1.1 It is a mandatory requirement that regular progress reports be prepared for all projects. This appendix describes the objectives, scope, and form of those reports. It also describes how the reports affect the management and direction of a project.

A.7.1.2 Monitoring of cost and progress is essential for the good management of any project. In the NHS this covers both:

- monitoring by the project director and project manager to enable them to manage cost, time, and quality, and
- monitoring by the NHS Executive to satisfy its accountability to the Department of Health and ministerial accountability to Parliament.

This appendix covers both requirements.

A.7.1.3 Key decisions need to be based on good information; that is information which is consistent, accurate, up to date and relevant, and in a form that can be readily understood and its significance appreciated. Graphical presentations, for example, may help trends to be better appreciated and understood. Progress must be measured against a plan which may change and develop as the project progresses, without ever losing sight of the base line. One principle of a good report is that the position at the date of a report is compared to what it should actually be, and the reasons for any deviation are explained.

A.7.1.4 Progress reports must cover all aspects of a project, including management processes; design; procurement; construction; cost; and cash flow.

A.7.1.5 Progress reports perform five important functions. They are to:

- keep the project director informed of the project status. They identify problems and options for their resolution, and provide the information to enable the project director to take key decisions promptly based on the most appropriate information;
- demonstrate that the project manager and project team are carrying out their responsibilities satisfactorily, and that the necessary management processes, procedures, and controls are in place and are operating effectively;
- provide a discipline for the whole project team, and establish a time reference for progress meetings and plans;
- provide a communication tool in a simple, comprehensive, and consistent format which can be distributed to the project team; and
- permit external monitoring and the gathering of statistics by the NHS Executive.

A.7.1.6 Reports must be accurate, consistent and on time. They must always be available at a set time and refer to data up to an established date – for example, the end of the previous month. The contents of reports, and the dates to which they refer should be clearly stated and all information, particularly that relating to cost, must be consistent and as up to date as can practicably be achieved.

Progress Reports

A.7.2.1 The monthly project progress report (PPR) issued by the project manager to the project director is one of a hierarchy of progress reports, each in more detail than the preceding one, and summarising the details of the lower-level reports. The Level 1 report is prepared by the project director for the investment decision maker (IDM) and the board, and used for external monitoring by the NHS Executive; this gives overall progress and cost information in summary form only. Similarly, the various consultants and contractors will report to the project manager monthly and their reports will form the basis of the PPR.

A.7.2.2 The table below shows the typical structure of such an arrangement and the level of information required at each level.

Level	Recipients	Scope
Level 1	Top Management Trust board external reports to NHS Executive	Overall status trend indicators.
Level 2	Project director project manager	Design, Constructions, Progress and cost reports, problems and actions required.
Level 3	Project manager Project team	Information requests and responses, contractor progress and resources, design-cost/forecasts.

A.7.2.3 The following guidance mainly covers Level 1 and 2 reports.

A.7.2.4 Each report should summarise the lower-level report and add comment and explanation

where appropriate. It should include any information relevant to the recipient; if everything in a particular report is considered relevant, the full report should be appended as part of the next level. For example, the project director should issue the executive summary of the PPR to the chief executive officer, with brief supporting notes as appropriate.

Reports to the Trust

A.7.3.1 It is mandatory for Trusts to establish a regular monthly PPR. The details of the requirement will be set out in the Project Execution Plan, but the Project Director must ensure that the requirement is included in the duties of the project manager, the quantity surveyor, and all other consultants when they are appointed. Reports should be submitted monthly over the duration of whole project, starting one month after the appointment of the project manager.

A.7.3.2 The information required for the PPR should be only that which the members of the project team need in order to carry out their respective responsibilities. The information must be kept in a form which allows the project team to generate the external report forms.

A.7.3.3 The PPR is a progress report on the design and construction of the project. The project director should bear in mind the broader needs of the project in the provision of health care, and may include in the Level 1 reports to the IDM and Trust board a section on the planning for such operational matters as:

- staffing and staff training;
- operational management of the facility; and
- maintenance of equipment and building services.

If these issues are not the project director's responsibility, the chief executive officer should require those responsible to prepare reports at the same frequency and timing as the PPR, so that they may be considered together.

Content of Level 2 Reports to the Project Director

A.7.4.1 Most project management organisations have their own standard reporting formats. If these provide the information required in sufficient detail, and are well presented, they should form a satisfactory basis for the PPR and need not be amended.

A.7.4.2 The typical contents of a PPR are:

- executive summary;
- project manager's report;
- highlights and changes since previous report;
- actions required and plans being developed;
- key decisions/information required;
- progress;
- design status (if appropriate);
- progress against plan with commentary;
- milestones achieved/anticipated;
- key plans for next month;
- changes to plan anticipated or recommended;
- procurement;
- tender status;
- contract or order placement;
- equipment inspection and delivery;
- financial status report;
- quality status; and
- staffing report.

These headings and descriptions are not mandatory, and may, require modification to suit the needs of a particular project and its contract procurement strategy. The emphasis will change from design to construction as the project progresses.

Financial Status Report

A.7.5.1 The Financial Status Report (FSR) forms a part of the PPR. It is usually prepared by the quantity surveyor for the project manager. It provides information on:

- the overall cost status;
- current commitments;
- orders placed;
- variation orders;
- estimated cost to complete;
- variations and instructions anticipated;
- future provisional sum expenditures;
- contract claims;
- contingency status;
- forecast payment profile;
- the status of payments and certificates; and
- final account progress.

The FSR is the formal record of the cost status of a project. Supporting records must be maintained, which provide a full audit trail of all financial transactions.

A.7.5.2 A typical FSR is given at the end of this appendix. A description of the terms used is given in para A.7.5.4 below. It shows the report in two sections, one below the other, for ease of presentation on a single page; in practice, it may be in one section on larger size paper.

A.7.5.3 The FSR is a statement of the financial situation of a project at a given point of time; it is a tool to assist in cost management, but does not of itself provide cost management. Cost management, which is the process of managing often competing demands of scope, quality, programme, and cost to achieve value for money within the approved budget depends on procedures established by the project director and project manager and set out in the Project Execution Plan (see Appendix 6).

A.7.5.4 The terms used in the FSR, by reference to the column numbers, are given below:

A. Approved budget. The capital cost approved in the Full Business Case.

B. Transfers and adjustments. Transfers out of contingency into a cost centre. The total of transfers out of contingency is equal to the total of transfers into a cost centre, so that the net transfer is always zero.

C. Approved budget changes. Changes to the approved budget which have been approved by the NHS Executive subsequent to the Full Business Case.

D. Current control budget. The budget used for comparison with the latest estimated cost (LEC), being the sum of columns A, B, and C.

E. LEC. The latest estimate of the total out-turn cost, made up of commitments to date plus an estimate of uncommitted amounts required to complete (columns K+P).

F. Net orders placed. The contract value of orders placed, before variations or claims, and excluding discounts, uncommitted provisional and prime cost sums, and VAT.

G. Variations – estimated. The cost of ordered variations, for which the value has not yet been agreed.

H. Variations – approved. The cost of ordered variations, the value of which have been agreed.

I. Provisional sums and dayworks – estimated. The cost of ordered provisional sums and dayworks, the value of which have not yet been agreed.

J. Provisional sums and dayworks – approved. The cost of ordered provisional sums and dayworks, the value of which have been agreed.

K. Total commitments. The total amount committed in respect of the project, being the sum of columns F, G, H, I, and J.

L. Future contracts. The estimated value of contracts which have not yet been committed.

M. Future variations. The estimated value of contract variations which have not yet been ordered.

N. Future provisional sums and dayworks. The estimated cost of provisional sums and dayworks which have not yet been ordered on committed contracts.

O. Contract Claims. The estimated value of contract claims received or anticipated.

P. Total uncommitted. The estimated value of that part of the total project cost which has not yet been committed, being the sum of columns L, M, N, and O.

Q. Paid to date. The total amount paid by the Trust in respect of the project.

R. Paid as a percentage of LEC. The proportion of estimated out-turn cost paid to date.

S. Certified to date. The total amount in respect of the project cost which has been certified for payment. This includes retention monies.

T. Certified as a percentage of LEC. The proportion of the estimated out-turn cost which has been certified for payment.

A.7.5.5 The most important comparison is between the current control budget (column D) and the LEC (column E). The total of commitments (column K) compared to the amount uncommitted (column P) gives a good indication of the risk which remains in the estimate. Columns Q and S indicate cash flow, and the difference is the amount due to be paid in the following month. When expressed as percentages, they are a good measure of progress for comparison with the physical progress report.

Cash Flow

A.7.6.1 Cash flow is important in its own right, because of annualisation and the need for the Trust to manage its overall cash requirements. It can also serve as a useful guide to project progress. A report on cash flow should be included in the PPR.

Inflation

A.7.7.1 For firm price contracts, the approved budget will normally be given in cash terms plus a separate allowance for inflation up to tender date.

A.7.7.2 Approval of projects which will include variation of price (VOP) clauses will, in addition to the allowances for inflation up to tender date, also include an allowance for contract price variations.

A.7.7.3 Adjustments for inflation between the base date of the approved budget and the date of accepted tenders are made by using a tender price index agreed in the Full Business Case. Adjustments after their tender dates are calculated in accordance with the VOP clauses in the contracts.

Mandatory Reports for the NHS Executive

A.7.8.1 Reports in a form to be announced must be submitted to NHS Estates when specified events occur or at the times stipulated in the procedures for all schemes exceeding the reporting threshold.

A.7.8.2 Reporting formats reflect the nature of the information and the purpose for which it is collected and are of two broad types:

- basic static information, which becomes available when particular events occur, and then remains largely unchanged for the duration of the scheme; and
- dynamic information, which changes over time and requires updating on a regular basis (normally monthly) for progress reporting throughout the scheme duration.

A.7.8.3 Reports of type (a) include the following:

- basic information which identifies the project, its purpose and function and forms a baseline for performance monitoring of cost and time. These are required at Full Business Case approval and any subsequent re-approvals, and show approved cost estimate and programme dates for agreed milestone events;
- information on consultant fee bids when commissioned and consultant performance at pre-determined intervals;
- Information on contractor's tenders at acceptance and contractor's performance on completion; and
- elemental cost analyses of successful tenders.

A.7.8.4 Reports of type (b) include the following:

- progress against scheme event milestones compared to baseline;
- comparison between current estimate and baseline, together with reasons for changes classified in accordance with the CUP guidance No.38 'Approval of Works Projects';
- contract information to allow prediction of time and cost outcome at an early stage;
- cash flow comparison for the scheme.

A.7.8.5 The project director should obtain all the data necessary for the mandatory NHS Executive reports from the project manager, who should prepare the report forms for the approval of the project director.

A.7.8.6 Trusts must also notify the NHS Executive if, at any time during the course of design and construction:

- the re-approval criteria are breached; or
- any fundamental criteria established in the Full Business Case have changed significantly.

FINANCIAL STATUS REPORT

NHS Trust:
Project Name:
Project Ref:

Report No.:
Effective Date:

		TOTAL PROJECT COST						COMMITMENTS				
Ref Cost Centre	Description	Approved Budget A	Transfers Adjustment B	Approved Budget C	Current Control Budget D=A+B+C	Latest Estimated Cost E=K+P	Net Orders Placed F	Variations		Professional Sums & Dayworks		Total Commitment Sum of F to J K
								Estimated G	Approved H	Estimated I	Approved J	
01 02 03 etc	Contingency Inflation											
	VAT											
	TOTAL		Zero									

		UNCOMMITTED AMOUNTS						PAYMENTS			
Ref Cost Centre	Description	Contracts Not Yet Placed L	Future Variations M	Future Prov Sums & Dayworks N	Contract Claims O	Total Sum of L+M+N+O P	Paid To Date Q	Paid as % of LEC R	Certified To Date S	Certified as % of LEC T	COMMENT
	Contingency Inflation										
	VAT										
	TOTAL		Zero								

Prepared by:- (QS)
Approved by:- (PM)

Date:-

Appendix 8: Mandatory Reports to the NHS Executive

A.8.1.1 The chief executive of the NHS Executive is accountable to Parliament for the NHS capital programme. Also Treasury require information to be regularly returned about the progress of schemes and contracts. To fulfil these obligations, it is necessary for units to return the information as outlined below.

A.8.1.2 These returns were previously known as CONCISE forms. The content and layout of the forms been radically revised, so that only the minimum data is returned to the centre.

A.8.1.3 The project director is responsible for the return, on time, of the appropriate forms and is required to sign his or her authorisation. Full guidance on the completion of the forms will be issued separately. An exemplar will also be provided.

Schemes and Contracts Which Must Be Reported

A.8.2.1 A separate circular gives details of the various reporting and approval thresholds. Though a scheme may not require approval it may still be the subject of regular reports to the NHS Executive. The scheme reporting threshold refers to the total scheme sum as shown on the form FB1. Only those contracts which are part of a scheme over that threshold and with a contract value in excess of the contract reports threshold are reported separately. The contract value includes the main contract with any associated fees and sub-contracts.

A.8.2.2 Where a scheme which was below the reporting threshold increases in cost to above the threshold it will not become subject to these reporting procedures until the cost increase is 5% or more of the original Full Business Case.

Reporting Timetable

A.8.3.1 Those schemes over the approval threshold require Full Business Case approval. Returns are due, as identified below, from that date. Reports are made for other schemes above the scheme reporting threshold from the date on which the NHS Executive, chief executive or project director, as appropriate, approves the Full Business Case.

A.8.3.2 It is important that forms are received within seven days of the due date.

Forms and Frequency of Return

MCP 100 – SCHEME MONTHLY AND THREE-MONTHLY REPORT

A.8.4.1 This form is used for all schemes above the scheme reporting threshold.

A.8.4.2 This is returned at monthly intervals from the date of the Full Business Case until the month after the date of the Final Certificate of Practical Completion (or the equivalent completion point for management, and design and build contracts) is issued. After that, quarterly returns are required until the project director certifies that the scheme identified in the Full Business Case has been completed. This will be after the settlement of all final accounts.

A.8.4.3 As the scheme develops through stage 2, the Full Business Case sum will be allocated more firmly to the various categories. Where schemes require Full Business Case approval, this is given for cost, time and functional content.

FORM MCP 200 – PRE-TENDER AND POST-TENDERING REPORTING

A.8.4.4 The information is only required for those contracts which at the end of stage 2 have a budget in excess of the contract reporting threshold. This form is in two parts and is returned twice. The first return is made when the Certificate of Readiness to Proceed to Tender is issued. The second return is when the certificate to proceed to contract is issued.

FORM MCP 300 – CONTRACT MONTHLY AND THREE-MONTHLY REPORT

A.8.4.5 The information is only required for those contracts which at the end of stage 3 have a contract sum in excess of the contract reporting threshold. The report is returned monthly from the date of start on site until the month after the Certificate of Practical Completion (or its equivalent for other forms of contract) is issued. It is then returned quarterly until the Certificate of Final Account is issued.

FORM MCP 700 – ELEMENTAL COST ANALYSIS

A.8.4.6 An elemental cost analysis is a breakdown of the capital cost of building work only into standard elements of the structure, such as floors, roof, walls, partitions, etc. Once the main contract has been placed for a scheme containing a substantial proportion of new building work, an elemental cost analysis should be prepared by the

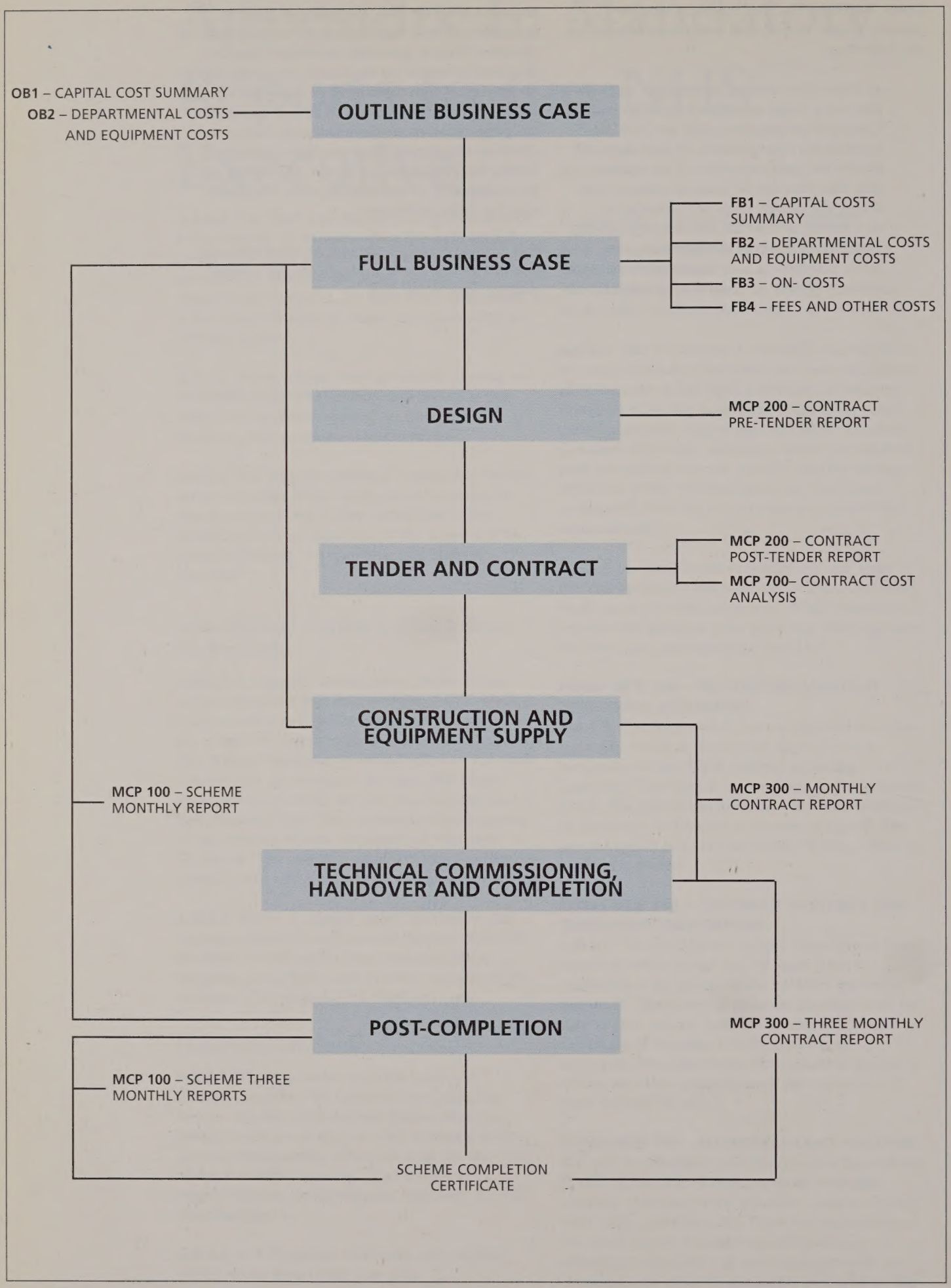
quantity surveyor and submitted to NHS Estates, Leeds. An elemental cost analysis forms the primary source of cost data which can be used for the following:

- as a basis for creating an estimate and cost plan for a future scheme of a similar nature. Computer programmes such as CONCISE 5 facilitate the manipulation of such data and enable the rapid assembly of an estimate and cost plan that can be used to control costs during the design stage of a scheme; or
- as a source of data for checking the validity of departmental cost allowances against actual schemes or as a source of data for the creation of new or revised departmental cost allowances.

A.8.4.7 An elemental cost analysis is normally prepared from the data contained in a Bill of Quantities. Where schemes are let without Bills of Quantity, there is generally insufficient detailed cost data to enable an elemental cost analysis to be prepared. With the advent of computer-based systems for the preparation of Bills of Quantities, the preparation of an elemental cost analysis is a relatively simple task involving little extra work during the preparation of tender documents and the completion of the analysis, once the tender sum has been established.

Full details of how to prepare an elemental cost analysis can be found in the CONCISE 3 users' manual Appendices 1–4.

FIGURE 2: USING THE SCHEME AND CONTRACT MONITORING REPORTS



FORM MCP 100A

FBC Approval date (or finalised)
_____
_____

Commercial – in confidence

Trust/Provider Unit

ROME Code

SCHEME Monthly Return

One / Three

Scheme Title

Project Director (person)

Phase

Organisation Code

Period Ending (DD/MM/YYYY)

Are there any changes to the approved forms FB1 or FB2?

YES	NO

(DELETE AS APPROPRIATE)

COST

ALLOCATE COST FOR VARIANCE BETWEEN FBC AND EXPECTED OUT TURN

ITEM	Payment to date £	Scheme budget to date £	Expected out turn £	FBC sum	Estimating changes	Design changes	Client changes	Ground conditions	External factors	Inflation	Claims	Other
Land *(see note 3)*												
In-house resources												
● Contract 1 *(see note 4)*												
● Contract 2												
● Contract 3												
● Contract 4												
● Other Contracts *(see note 5)*												
Other fees												
Equipment												
Other scheme expenditure												
Scheme contingency												
Sub-total												
VAT												
Inflation												
Forecast Total												

● Contracts (include associated fees) over reporting threshold

Funding or expected out turn

EFL		OG		PRIVATE	

NOTES:

1 This form should be used for all schemes over the reporting threshold.

2 From the date FBC approval (or from finalised FBC if approval is not required) this form should be returned at monthly intervals within 7 days of the month end. After all contracts have reached the end of stage 5, this form may be returned 3 monthly within seven days of the period end.

3 Land purchases are shown as positive, land sales negative.

4 For contracts over the contract reporting threshold froms MCP 200, MCP 300, MCP 500, MCP 600 and MCP 700 must also be returned at appropriate times.

5 Insert value of contracts plus fees below the reporting threshold and works costs prior to allocation to individual contracts.

6 EFL = External Financing Limit.
OG = Other Government Sources.

SCHEME Return

PROGRAMME & PROGRESS

Milestone	Programmed Date DD/MM/YYYY	Forecast/Actual Date DD/MM/YYYY
Final Certificate of Readiness to proceed to tender issued		
Second Treasury Approval		
Contract start on site		
Date of last contract 'Practical Completion' certificate issued		
Scheme completion date		

Reasons for difference in scheme completion of date

Reason	Months
Estimating Changes	
Design Devlopment	
Client Changes	
Ground Conditions	
External Factors	
Contractor/Consultant Performance	
Other (comment below)	

Comments

Construction Procurement Strategy and Current Status

Other comments

Completed by _____

Name (capitals) _____

Position _____

Address _____

_____

Telephone _____

Authorised for issue _____
Project Director

Date _____

PLEASE RETURN TO: NHS Estates, Department of Health, Room 2E9, 1 Trevelyan Square, Boar Lane, Leeds LS1 6AE

Commercial – in confidence

CONTRACT
Pre-Tender Report

Trust/Provider Unit
ROME Code
Scheme Title
Contract Title
Project Director (person)

Organisation Code
Information valid at

PART **A**: Section **A**:

1 Professional Services — Consultant's name
- a Architect
- b Structural Engineer
- c Mechanical Engineer
- d Electrical Engineer
- e Quantity Surveyor
- f Project Management

2 Type of Accommodation

3 Functional Content

4 Class of Work

5 From/Type of Construction

6 Project Funding
- a EFL b OG c Priv

7 Date of Certificate of Readiness to Proceed to Tender

8 Date of EC Official Journal Notice

PART **A**: Section **B**:

1 Contract Information

Target Start Date — Target Completion Date

Tendering Procedure — Type of Contract

Form of Contract — Fluctuating/Fixed Price*

2 Cost Information — MIPS Index — Indices Base: 1975 = 100

	Pre-Tender Estimate £	Budget Allocation £	Variance =/–
Contract			
Associated Fees			
VAT			
Total			

PART **A**: Section **C**: Notes

*Delete as appropriate.

Completed by _____

Name (capitals) _____

Position _____

Address _____

_____

Telephone _____

Authorised for issue _____
Project Director

Date _____

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Commercial – in confidence
Trust/Provider Unit
ROME Code
Scheme Title
Contract Title
Project Director (person)

Organisation Code
Information valid at

CONTRACT
Post-Tender Report

PART **B**: Contract Information:

1 Contractors	(i) Name	(ii) Prime Cost Sums (£)	(iii) Unadjusted Main Tender (£)	(iv) Adjusted Tender (£)
a Main Contractor *(including Management Contractor, Design and Build Contractor, Consortium)*				
b Mechanical				
c Electrical				
d Lifts				
e All other adjustments to the main contract				

2 Tender date
3 Date awarded
4 Tender base date
5 Index of approved tender
(Base 1975=100)
6 Contract dates – start: complete:

7 Approved tender sum _____
8 Contingency sums in tender _____
9 Net tender
10 Fees
11 VAT _____
12 Overall Cost at Tender _____

NOTES

Completed by _____
Name (capitals) _____
Position _____
Address _____
_____
Telephone _____

Authorised for issue _____
Project Director
Date _____

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Trust/Provider Unit

Scheme Title

Contract Title

Project Director (person)

Organisation Code

Period Ending

Report Number

One / Three

CONTRACT Monthly Return

Section A: PROGRESS

1 Original Completion Date

2 Extended Completion Date

3 Extended/Practical Completion Date

4 Outstanding applications for extension of time days

5 Planned %

6 Actual %

Section B: VARIATIONS

	Issued £	Anticipated £
1 Design team variations		
2 Client variations		
3 External Factors		
4 PC sums adjustments		
5 Prov'l sums/quantities adjustments		
6 Ground Conditions		
7 Other		
TOTALS		

No. of Variations issued No. of Items Instructed

Section C: COSTS (excluding fluctuations)

	£
1 Contract Costs	
a Approved tender sum excl. contingencies	
b Issued variations	
c Anticipated variations	
d Ascertained claims	
e Balance of notified claims	
f Anticipated claims	
g Balance of contingencies	
2 Contract Commitment	
3 Current Budget Allocation	
4 Variance +/-	
5 Total Contingencies approved for Contract	
6 Final Cost excluding Fluctuations	
7 Fees	
a Expenditure since last report	
b Total expenditure to date	
c Expected final total expenditure	
8 VAT allowance	

Section D: EXPENDITURE SINCE LAST REPORT

* Before deducting retention and excluding fluctuations and claims
† Assessment of variations included in certificate

a	b	c	d	e	f	g
		CUMULATIVE VALUE			AMOUNT IN COLUMN C FOR	
No. of Certificate	Date of Certificate dd/mm/yyyy	Contract Works* £	Fluctuations £	Claims £	Engineering Services* £	Variations† £

Section E: ADDITIONAL INFORMATION

COMMENTS AND ASSESSMENTS

CONTRACT
One / Three Monthly Return

By _____

Physical Progress and Programme

Costs

General State of Contract *(delays, claims, other)*

Completed by _____

Name (capitals) _____

Position _____

Address _____

_____

Telephone _____

Authorised by _____
Project Director

Date _____

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Commercial – in confidence

Trust/Provider Unit

ROME Code

Scheme Title

Contract Title

Project Director (person)

Organisation Code

COST ANALYSIS
Information Sheet

Building Ref_____

Sub Ref_____

Functional Depts_____

_____

No. of Storeys_____

Class of Work_____

Average Storey Heights

Below Ground Floor_____m

Ground Floor_____m

Upper Floors_____m

External Wall: Floor Ratio_____

Internal Cube_____m^3

Areas m^2

Usable _____m

Circulation _____m

Communications _____

Gross Floor Area _____m^2

Date of Tender_____

Contract Period_____

Fixed Price/VOP* Delete as appropriate

% Below Second Lowest Tender_____

Contract Tender Price Index

Element	Total Element Cost £	Element Unit Quantity	Per	Grades 1	2	3
1. Substructure			m^2			
2. Superstructure						
a Frame			m^2			
b Upper Floors			m^2			
c Roof			m^2			
d Stairs			No.			
e External Walls			m^2			
f Windows and External Doors			m^2			
g Internal Walls and Ptns			m^2			
h Internal Doors			No.			
3. Internal Finishes						
a Wall			m^2			
b Floor			m^2			
c Ceiling			m^2			
4. Fittings and Furnishings			Item			
5. Services						
a Sanitary Appliances			No.			
b Equipment			m^2			
c Disposal Installation			No.			
d Water Installation			No.			
e Heat Source			kW			
f Space Heating & Air Treatment			m^3			
g Ventilation			m^3			
h Electrical Installation			No.			
i Gas Installation.			No.			
j Lifts, etc.			No.			
k Protective Installations			m^2			
l Communications			No.			
m Special Installations			m^2			
n BWIC			m^2			
o Profit and Attendance			m^2			
6. External Works						
a Site Works			m^2			
b Drainage			m			
c External Services			m			
d Minor Buildings			m^2			
Preliminaries						
Contingencies						
TOTAL						

Commercial – in confidence

COST ANALYSIS
Information Sheet

FUNCTIONAL DEPARTMENTS (ring as appropriate)

		16	AN	32	CE	48	GP	64	HSDU	80	MW	96	NBTS	112	OPTR
1	A&ED	17	ACU	33	COPD	49	CO	65	HSSU	81	MP	97	NP	113	OPTS
2	A&EOP	18	AR	34	CR	50	HPH	66	HY	82	MPH	98	NT	114	PAL
3	A&EO	19	BH	35	CC	51	SD	67	IN	83	MHADC	99	OH	115	PHSL
4	A&ER	20	BU	36	ENT	52	SCH	68	ITH	84	MHAR	100	OTH	116	PA
5	A	21	CAR	37	ED	53	SGP	69	I	85	MHCR	101	ON	117	PC
6	ADG	22	FS	38	EMN	54	SW	70	LA	86	MHCU	102	OP	118	PI
7	AC	23	DI	39	EMD	55	STH	71	LD	87	MIN	103	OCC	119	PN
8	AE	24	K	40	EL	56	EN	72	LN	88	MIAD	104	OCD	120	PT
9	MR	25	CK	41	ER	57	EAD	73	LP	89	MIA	105	OCL	121	PTE
10	ASG	26	CSSD	42	G	58	EDH	74	LS	90	MID	106	OPDC	122	PHA
11	AA	27	CT	43	H	59	EDO	75	LT	91	MIECT	107	OPDDW	123	PHM
12	AF	28	CHA	44	HAC	60	ENO	76	MR	92	MIE	108	OPDD	124	PHY
13	AI	29	CN	45	CH	61	ES	77	MC	93	MIOPD	109	OPDOP	125	PTH
14	AM	30	CCA	46	CHS	62	EC	78	MK	94	MB	110	OPDO	126	PG
15	AT	31	CD	47	DEN	63	D	79	MN	95	MO	111	OPN	127	PS

128	X	144	CA(T)	160	SB(T)	176		192		208		224		240	
129	US	145	CC(T)	161	STA(T)	177		193		209		225		241	
130	RI	146	CM(T)	162	STC(T)	178		194		210		226		242	
131	RO	147	E(T)	163	UA(T)	179		195		211		227		243	
132	RE	148	I(T)	164	UC(T)	180		196		212		228		244	
133	R	149	P(T)	165	UM(T)	181		197		213		229		245	
134	RH	150	SA&E(T)	166	TSSU	182		198		214		230		246	
135	ST	151	SA(T)	167	TH	183		199		215		231		247	
136	SGA	152	SC(T)	168	TR	184		200		216		232		248	
137	SCM	153	SCO(T)	169	UGC	185		201		217		233		249	
138	SCSA	154	SG(T)	170	U	186		202		218		234		250	
139	SD	155	SI(T)	171	WD	187		203		219		235		251	
140	SR	156	SM(T)	172	WS	188		204		220		236		252	
141	SRM	157	SO(T)	173		189		205		221		237		253	
142	SS	158	SP(T)	174		190		206		222		238		254	
143	TB	159	SR(T)	175		191		207		223		239		255	

Completed by _____

Name (capitals) _____

Position _____

Address _____

_____

Telephone _____

Authorised by _____
Project Director

Date _____

PLEASE RETURN TO: NHS Estates, Department of Health, Room 2E9, 1 Trevelyan Square, Boar Lane, Leeds LS1 6AE

Appendix 9: Assessment of Consultants' and Contractors' Performance

As part of their obligations to manage every aspect of the building process, NHS Trusts and authorities are required to complete financial and technical checks of all firms being considered for inclusion on tender lists.

The information supplied to NHS Estates on the performance of contractors and consultants will be made available to NHS Trusts and authorities to assist them in formulating their tender lists. These forms are required for all schemes above the Scheme Reporting Threshold.

Consultants MCP 500

NHS trusts and authorities will be able to ascertain the current levels of fee bids, to allow them to compare the competitiveness of bids as well as the performance of consultants. Notification of details of bids for all consultants should be returned no later than seven days after notification to the successful consultant. The assessment of the consultant's performance should be returned at the end of each of the following appropriate stages of the service

- design (issue of the Readiness to Proceed to Tender Certificate);
- construction (issue of Practical Completion Certificate); and
- commission.

Contractors MCP 600

Information on the performance of contractors will highlight areas of poor performance, which may influence the decision to short-list firms for a scheme. The information on tender results on contractors and subcontractors will show how competitive they have been in previous tenders and how well they have performed on other health schemes. The results of all tenders for contractors and subcontractors shall be returned on the date of tender acceptance. The performance report on the contractors' and subcontractors' performance shall be returned at practical completion.

Forms MCP 500 and MCP 600 are set out on the following pages.

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Provision of services

Trust/Provider Unit

Organisation Code

ROME Code

Scheme Title

Phase

CONSULTANT
Assessment Report

Contract Title

Project Director

Part A: DETAILS OF BIDS

Fee bids based on £ (excl. VAT)

Tender	Name/Address	Negotiated/ Competitive	% LS TC Mixed	Overall fee at %
Successful				
Second				
Third				
Fourth				
Fifth				
Sixth				

Include details of those failing to submit:

Date of award

Date of estimated commission completion

Stage	Analysis of successful fee bid Percent of £
2	
3	
4	
5	
6	
Overall percentage	

Completed by _____

Name (capitals) _____

Position _____

Address _____

_____

Telephone _____

Authorised by _____
Project Director

Date _____

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QUALITY OF SERVICE

PART **B**: AT END OF DESIGN STAGE

Marking: ☐ *See below*

Actual/Expected Completion Date of Commission _____

Form completed by _____

Name (capitals) _____ Position _____

Address _____ Date _____

_____

Telephone _____ Authorised for issue _____

Project Director

PART **C**: AT END OF CONSTRUCTION STAGE

Marking: ☐ *See below*

Actual/Expected Completion Date of Commission _____

Form completed by _____

Name (capitals) _____ Position _____

Address _____ Date _____

_____

Telephone _____ Authorised for issue _____

Project Director

PART **D**: AT END OF COMMISSION

Marking: ☐ *See below*

Actual Completion Date of Commission _____

Form completed by _____

Name (capitals) _____ Position _____

Address _____ Date _____

_____

Telephone _____ Authorised for issue _____

Project Director

Stage	Analysis of out-turn fee bid Percent of £
2	
3	
4	
5	
6	
Overall percentage	

MARKING:
1 Would hesitate to recommend for future commissons.
2 Below average
3 Average
4 Above average

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LUMP SUM CONTRACTS

Trust/Provider Unit
ROME Code
Scheme Title
Contract Title
Project Director (person)

Organisation Code

TENDER SUMMARY: Part **A**

Pre-Tender Estimate

Site/Service

Date Tenders Invited

Contractors Invited*	Tender Value	Tender Position	Comments

Contract Awarded to

Date Awarded

Contract Period

** Please include those that did not respond to their tender invitation.*

Completed by _____

Name (capitals) _____

Position _____

Address _____

_____

Telephone _____

Authorised for issue _____
Project Director

Date _____

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PERFORMANCE REPORT BY THE CONTRACT ADMINISTRATOR

Your Assessment of the Contractor's Performance

Trust/Provider Unit
ROME Code
Scheme Title
Contract Title
Project Director (person)

Organisation Code

TENDER SUMMARY: Part **B**

Aspects of the Contract	Mark
1 Workmanship	
2 Speed	
3 Organisation	
4 Health and Safety	
5 General Operation	

A Above average
B Average
C Below average
D Would hesitate to recommend for future contracts (this MUST be substantiated by writing a separate report and attaching copies of all relevant correspondence with the contractor).

COMMENTS:

Completed by _____
Name (capitals) _____
Position _____
Address _____
_____
Telephone _____

Authorised for issue _____
Project Director

Date _____

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Appendix 10: Glossary of Terms

Activity Database (ADB)
A computerised briefing guide for design teams and health administrators. ADB assists by defining specific activities which have to be accommodated in health building space and design, by listing the functional requirements and their related components.

Approved Budget
The capital cost of the project in the Full Business Case approved by the NHS Executive, or any changes to it approved subsequently.

Brief
The document which defines the Trust's requirements and which forms the basis of all subsequent design, procurement, and construction.

Business Case Guide for Capital Investments (Business Case Guide)
The document issued by the Executive detailing the procedures necessary to obtain approval of and funding for a new capital investment project in the NHS.

CEO
The chief executive officer of a Trust.

CONCISE
CONCISE is a software system for the NHS capital programme. It comprises a suite of programmes designed to assist project managers, finance managers and construction specialists. NHS Estates can provide more information on CONCISE.

CONCODE
Guidance on the procurement of and contractual arrangements for NHS building and engineering work and on the commissioning of consultants. Issued by NHS Executive.

Contingency
An allowance in a project budget or cost estimate, over and above the base estimate, to provide the most likely outcome of time and cost after taking risks into account, and assuming that management action is taken to minimise their effect.

Contract Administrator
The person named in a construction contract with responsibility for administering it and for giving decisions in respect of it.

Contract Procurement Strategy
A planned strategy of arranging for the project to be designed and constructed. It determines the number, scope, and types of contracts to be placed.

Departmental Cost Allowance (DCA)
A reference cost issued by NHS Executive for the provision of a defined amount of functional accommodation based on Health Building Notes (HBHs). (See also on-costs.) Used to assist estimating.

Design Team
The professional architects and engineers responsible for the design of a project.

EFL
External financing limit – the amount provided to a Trust for capital expenditure.

EPC
Estimate of prime cost based on preliminary design proposals under a management contract.

Final Account
The final cost of a contract after taking into account any re-measurement, variations, provisional and prime cost sums, and claims. Agreed by the quantity surveyor.

Financial Status Report (FSR)
A report prepared monthly by the quantity surveyor and the project manager for submission to the Trust which shows the financial position of the project. Terms used in the FSR are defined in Appendix 6.

Fixed price (FP) tenders
See Median Index of Public Sector (MIPS) Building Tender Prices.

Full Business Case (FBC)
The document prepared by a Trust in accordance with the Business Case Guide and approved by the Outpost which defines the criteria for a project.

Health Building Notes (HBNs)
Documents prepared by NHS Executive which set the standards of accommodation and environmental services for health buildings.

Health Building Procedures
These and other related procedures relating to the management of health care building projects issued by the Executive.

Health Technical Memoranda (HTMs)
Documents prepared by NHS Executive which give guidance on specific health building subjects, mainly in the field of engineering and safety standards.

Inflation
The change in the estimated cost of a project due to increases or decreases in general price levels. The adjustment made to a cost estimate, which is based upon price levels at the date of the estimate, in order to provide a proper comparison of actual cost with the Approved Budget.

Investment Decision Maker (IDM)
The project specific role of the CEO.

Latest Estimated Cost
The estimated out-turn cost of the project at the date of the report.

Median Index of Public Sector (MIPS) Building Tender Prices
A quarterly series of indices calculated from rates for measured work contained in Bills of Quantities for accepted tenders for a range of public sector building works, including those for the health service. MIPS is the Department of Health acronym for the Public Sector (PUBSEC) unweighted index series produced by the Department of the Environment. The index series is sub-divided into Tenders let on a Firm Price (FP) - generally those with a contract period not exceeding two years and Variation of Price (VOP) tenders - generally those with a contract period exceeding two years. Unlike FP tenders where the tenderer has to make an allowance for increased costs in the original tender, VOP tenders are net of increased costs, which are reimbursed separately - usually by means of a formula applied to a breakdown of the original tender. NHS Estates can provide further advice on these indices and forms of tender.

NHS Estates
An Executive Agency of the Department of Health which undertakes a range of central responsibilties in relation to capital projects on behalf of the NHS Executive.

NHS Executive
The Executive of the NHS.

NHS Trust
A Health Care organisation within the NHS, which has been given Trust status and responsibilities.

Nucleus
A system for hospital planning and design, supported by comprehensive information, including standardised briefing material and planning documentation.

Outline Business Case (OBC) – (see *Business Case Guide*).

On-costs
That part of the capital cost of a building arising from the interaction of departments within a building and the building with its site.

Post-tender Estimate
The estimated capital cost of a project when bids for the main construction contract have been received, based on the accepted price.

Pre-tender Estimate
The estimated capital cost of the project when the tender documents for the main construction contract have been completed, but before bids have been received.

Project
A programme of activity to deliver a scheme for capital investment in a health care building scheme and associated facilities and equipment. It may be a part of a wider scheme with the objective of enabling a Trust to improve health care more generally, including other activities such as staff resources and training, operating procedures, and the like.

Project Board
A board comprising senior Trust personnel with responsibilities for a project delegated to it by the IDM.

Project Director (PD)
The individual appointed by a Trust to represent it and to take personal responsibility for the successful outcome of a project. Reporting to the IDM and with delegated authority to manage the day to day issues of the project.

Project Execution Plan (PEP)
A document prepared by the project manager under the direction of the project director which sets out the scope, objectives, relative priorities, control processes, and administrative arrangements for a project.

Project Manager
The individual with professional capability appointed to manage the design, construction, procurement, and commissioning of a building project. Generally, the senior person in charge of the resource provided by an externally appointed project management firm and referred to as the 'project manager'. Responsible to the project director.

Project Progress Report (PPR)
A monthly report, prepared by the project manager, for submission to the Trust which shows the progress of the Project compared with the programme. The PPR incorporates the Financial Status Report.

Project Team
The project manager, designers, quantity surveyors, contractors, and other people appointed by the project director to manage, design, and build the project. All are usually external appointments.

PSCR
The Public Supply Contracts Regulations (S.I. 1991/2679) published by HMSO, or any subsequent amendment to it.

PWCS
The Public Works Contract Regulations 1991 (S.I. 1991/2680) published by HMSO, or any subsequent amendment to it.

Site
The place where the project building works are to be carried out and the equipment installed.

User Panel
A panel of end users established for the purpose of defining requirements for inclusion in the brief and monitoring that those requirements have been met. This function may also be carried out by the project board.

Value Engineering
A review of the design of a part of a project to determine whether the objectives of the brief could be achieved in a better way. The improvement may be in its capital cost, in ease of construction, in co-ordination with other features, in ease or cost of operation, or in aesthetic appearance.

Variation of Price (VOP)
A clause in a contract which provides for contract payments to be adjusted to take account of increases or decreases in cost due to inflation. The adjustments are usually made by reference to published cost indices. (See Median Index of Public Sector (MIPS/Building Tender Prices).

Appendix 11: Bibliography

Other documents in the *Capital Investment Manual*:

Overview for Chief Executives
Project Organisation
NHS Business Case Guide for Capital Investments
Private Finance Information Pack
IM&T Guidance
Commissioning a Health Care Facility
Post-project Evaluation

Treasury Central Unit on Procurement (CUP) Guidance:

Project Sponsorship (No.33)
Approval of Works Projects (No.38)
Managing Risk and Contingency for Works Projects (No.41)
Contract and Contract Management for Construction Works (No.12)
Contract Strategy Selection for Major Projects (No.36)
The Selection and Appointment of Works Consultants (No.13)
Selection of Works Contractors (Nos. 26a and b.)
Post Tender Negotiations and PTN Update (Nos.1 and 19)
Estimating for Works Projects (No.15)
Cost Management for Works Projects (No.25)
Life Cycle Costing (No.35)

NHS Estates Publications

ESTATECODE (Asset Management):
- Strategic Asset Management
- Asset Maintenance
- Estate Investment Planning
- Analysis of Estate Performance
- Environment for Quality Care

CONCODE:
- Procurement and Contract Policy
- Guidance on Contract and Commissioning Procedures
- Guidance on Requirements of EC Directives
- Guidance on Specific Standard Lead Forms of Contract

Quarterly Briefing: Investment Economics and Construction Project Information

Health Building Notes:
- various

Health Technical Memoranda:
- various

Health Facilities Notes:
- various

Firecode:
- various

Other:
Hospital Building in England:
Treasury Minute on the Eighteenth Report from the Committee of Public Accounts 1989-90. Cm.1150.

The Chelsea and Westminster Hospital:
Treasury Minute on the Twenty-sixth Report from the Committee of Public Accounts 1992-93. Cm.2186.

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